ESTABLISHED IN 1872

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FIFTY-FIRST YEAR

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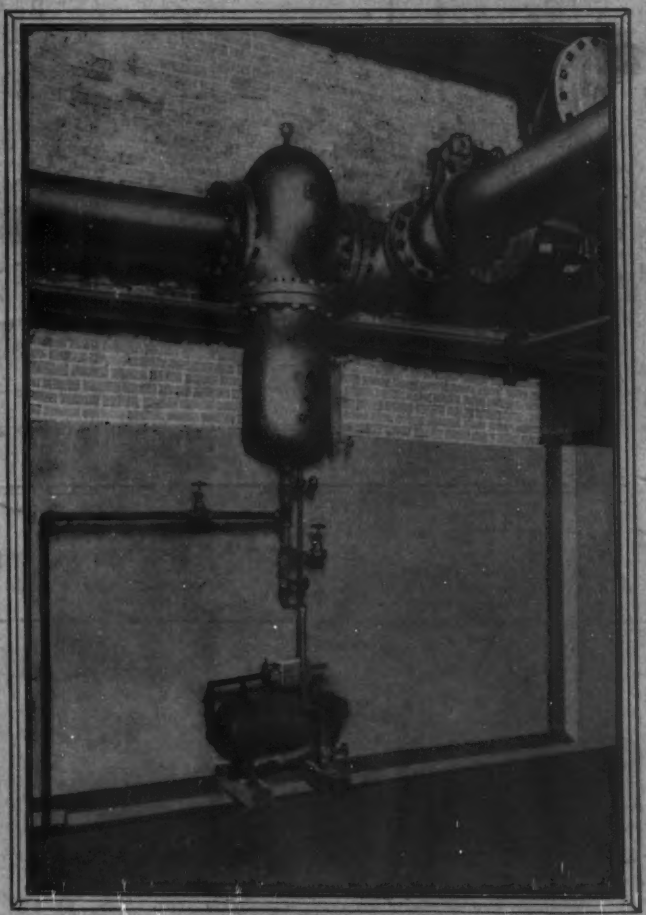

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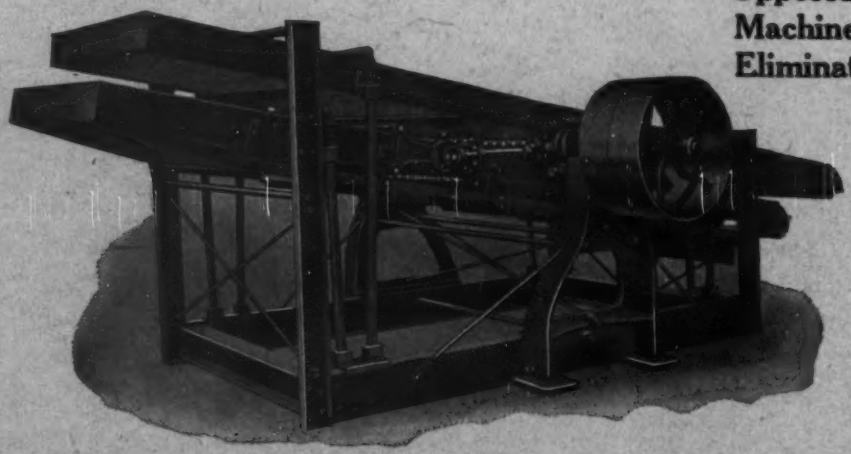

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ESTABLISHED IN 1872

PAPER TRADE JOURNAL

The International Weekly of the Paper and Pulp Industry and the Pioneer Publication in its field

FIFTY-FIRST YEAR

Published Every Thursday by the

LOCKWOOD TRADE JOURNAL COMPANY, Inc.

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PRODUCTION OF NEWS PRINT FOR THE MONTH OF JANUARY

According to Figures Just Issued by the Federal Trade Commission the Production for January of This Year Compared With January a Year Ago Showed an Increase of 20 Per cent for Total News Print and 21 Per Cent for Standard News—Weighted Average Market Price for the Month of Standard Roll News in Car Load Lots Was $3.794 Per 100 Pounds.

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., February 28, 1923.—The following is a tabulation of the reports received by the Federal Trade Commission from domestic manufacturers of news print paper, from jobbers buying and selling news print paper, and from publishers using news print paper. Import and export statistics of the Department of Commerce for October, 1922, are also included in this review. Whenever possible the figures for 1923 are compared with those for the corresponding period of 1922, 1921, 1920, 1919 and 1918.

The figures which follow show the results of the Commission's tabulation for January, 1918, to 1923, inclusive.

TOTAL NEWS PRINT

Total News Print	Number of mills	Stocks on hand first of period Net tons	Production Net tons	Shipments Net tons	Stocks on hand end of period Net tons
January, 1923	73	19,208	127,452	123,656	23,004
January, 1922	65	23,934	105,808	103,192	26,550
January, 1921	85	24,763	123,830	116,176	32,417
January, 1920	89	15,396	129,663	128,098	16,934
January, 1919	66	19,408	116,154	114,343	21,219
January, 1918	66	31,713	105,700	108,485	28,928

STANDARD NEWS
(INCLUDED IN TOTAL NEWS PRINT)

January, 1923	61	15,128	117,497	114,168	18,457
January, 1922	53	19,607	98,702	96,525	21,784
January, 1921	67	19,573	113,764	106,228	27,109
January, 1920	66	12,338	114,957	112,719	14,576
January, 1919	51	15,656	106,002	105,169	16,489
January, 1918	50	26,482	97,086	96,336	27,232

NOTE—Above figures for total news print do not include hanging paper.

The average production of total news print and standard news, based upon the total combined production for the years 1918 to 1922, inclusive, amounted to 115,908 tons for total news print, and 105,456 tons for standard news for a period corresponding to January. The actual production for January, 1923, amounted to 127,452 tons of total news print and 117,497 tons of standard news, which for total news print was 10 per cent above the average for the five-year period, and for standard news 11 per cent above the average.

The production of news print for January, 1923, compared with January, 1922, shows an increase amounting to 20 per cent for total news print and 19 per cent for standard news.

The production for January, 1923, compared with January, 1921, shows an increase of 3 per cent for total news print, and 3 per cent for standard news.

The production for January, 1923, compared with January, 1920, shows a decrease of 2 per cent for total news print, and 2 per cent increase for standard news.

The production for January, 1923, compared with January, 1919, shows an increase of 10 per cent for total news print and 11 per cent for standard news.

The production for January, 1923, compared with January, 1918, shows an increase of 20 per cent for total news print, and 21 per cent for standard news.

Loss of Production

The following tabulation shows idle machine time reported to the Commission for the month of January, 1923. This does not include mills shut down during the entire month.

Reasons	No. of machines	Hours idle
Lack of orders	...	...
Repairs	5	220
Other reasons	9	726

Imports and Exports

The imports and exports* of printing paper not dutiable (practically all news print) and of wood pulp for the month of October, 1922, compared with the month of October, 1921, as shown by the records of the Department of Commerce, were as follows:

	October, 1922 Net tons	October, 1921 Net tons
Imports of News Print (total)	118,010	75,555
From Canada	102,607	64,259
Germany	4,755	4,140
Sweden	3,733	5,405
Finland	3,453	1,469
Norway	2,440	181
Other Countries	1,022	101
Exports of News Print (total)	1,131	704
To Canada	84	11
Peru	42	.....
Cuba	613	309
Colombia	46	42
Philippine Islands	157	154
Central America	107	86
Other Countries	82	102
Imports of Ground Wood Pulp (total)	25,921	26,397
Imports of Chemical Wood Pulp (total)	109,346	66,155
Unbleached Sulphite	46,236	31,489
Bleached Sulphite	25,631	8,219
Unbleached Sulphate	31,279	24,890
Bleached Sulphate	6,200	1,557
Paper Stock Other Than Wood Pulp	35,664	9,128
Exports of Domestic Wood Pulp	1,149	2,032
Exports of Rags and Other Material Made From Vegetable Fibre	1,509	2,133

*Export figures for October, 1922, are republished in this issue for purposes of comparison.

The imports of news print for October, 1922, were 42,455 tons more than for October, 1921. The exports of news print for October, 1922, were 427 tons more than for October, 1921.

The tonnage to "other countries" under "Exports of News Print" for October, 1922, includes 24 tons to Mexico, 15 tons to Brazil, 19 tons to Venezuela, and 17 tons to Costa Rico.

Jobbers' Tonnage

The following tabulation shows the news print tonnage reported by jobbers during the month of January, 1923, compared with January, 1922, 1921, 1920, 1919 and 1918, together with commitments to buy and sell.

	On hand first of month Net tons	Received during month Net tons	Shipped during month Net tons	On hand end of month Net tons	Commitments to buy Net tons	Commitments to sell Net tons
Rolls, January, 1923	2,045	11,698	12,038	1,705	60,589	65,309
Rolls, January, 1922	2,298	8,889	9,305	1,882	31,945	36,890
Rolls, January, 1921	3,046	6,896	7,002	2,913	27,125	35,027
Rolls, January, 1920	1,920	6,721	6,742	1,899	65,526	74,097
Rolls, January, 1919	3,262	2,898	2,727	3,430	98,269	111,157
Rolls, January, 1918	2,604	2,074	2,330	2,348	(a)	(a)
Sheets, January, 1923	6,129	2,823	2,937	6,015	2,254	2,267
Sheets, January, 1922	4,262	2,592	2,743	4,111	2,064	1,393
Sheets, January, 1921	6,432	2,640	2,751	6,321	2,930	2,324
Sheets, January, 1920	3,554	3,244	3,108	3,690	5,996	3,929
Sheets, January, 1919	7,795	2,870	2,664	8,001	3,336	2,635
Sheets, January, 1918	6,823	2,397	2,848	6,372	(a)	(a)

TOTAL NEWS PRINT

January, 1923	8,174	14,521	14,975	7,720	63,843	67,576
January, 1922	6,560	11,481	12,048	5,993	34,009	38,283
January, 1921	9,478	9,509	9,753	9,234	30,055	37,351
January, 1920	5,474	9,965	9,850	5,589	71,522	78,026
January, 1919	11,057	5,765	5,391	11,431	101,605	113,792
January, 1918	9,427	4,471	5,178	8,720	(a)	(a)

(a) Figures not available.

Stocks of rolls in the hands of jobbers at the end of January, were 340 tons less than the stocks in the hands of the same jobbers at the beginning of the month. Stocks of sheets were 114 tons less at the end of January than at the beginning of the month. The net decrease in the total stocks of news print in the hands of jobbers at the end of January amounted to 454 tons.

Commitments to sell roll news were 4,720 tons more than com-

mitments to buy. Commitments to sell sheet news were 987 tons less than commitments to buy. Total commitments to sell both rolls and sheets were 3,733 tons more than commitments to buy.

Publishers' Tonnage

Monthly tonnage reports from 680 (a) of the most important newspaper publishing concerns and associations grouped according to the principal business sections of the United States, together with a separate tabulation for the agricultural publications, show the following results for January, 1923.

Location of publishers (b)	Number of concerns	On hand first of month Net tons	Received during month Net tons	Used and sold during month Net tons	On hand end of month Net tons	In transit end of month Net tons
New England....	77	17,802	20,664	15,855	22,611	4,116
Eastern States.....	176	52,357	69,590	65,679	56,268	19,769
Northern States...	133	39,632	42,203	41,234	40,601	11,037
Southern States....	79	9,971	7,935	8,723	9,183	4,236
Middle West.....	152	26,236	25,768	26,000	26,004	6,921
Pacific Coast.....	38	18,228	13,948	16,561	15,615	4,556
Farm Papers (c)..	25	1,917	1,620	1,500	2,037	249
Total	680	166,143	181,728	175,552	172,319	50,884

(a) This number represents a larger number of publications.
(b) *New England* includes Connnecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont; The *Eastern States* include Delaware, the District of Columbia, Maryland, New Jersey, New York and Pennsylvania; The *Northern States* include Illinics, Indiana, Michigan, and Ohio; The *Southern States* include Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia; The *Middle West* includes Arizona, Arkansas, Colorado, Idaho, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, Wisconsin and Wyoming; The *Pacific Coast* includes California, Oregon and Washington.
(c) The Farm Papers for the most part use special grades of newsprint instead of standard news.

Publishers' stocks increased 6,176 tons during the month. Average daily tonnage used during January was 238 tons less than the average used during December.

Publishers' stocks and transit tonnage on January 31 represented 40 days' supply at the existing rate of consumption.

Publishers' and jobbers' total stocks and tonnage in transit on January 31 aggregated 230,923 tons.

The domestic consumption of standard news by metropolitan dailies using between one-half and three-fourths of a million tons annually for January, 1923, when compared with January, 1922, shows an increase of 14 per cent and an increase of 27 per cent when compared with January, 1921.

The above metropolitan dailies held about 54 per cent of the tonnage on hand at the end of the month.

Average Prices Paid by Publishers

The weighted average price of contract deliveries from domestic mills to publishers during January, 1923, f. o. b. mill, in carload lots, for standard news in rolls was $3.745 per 100 pounds. This weighted average is based upon January deliveries of about 77,000 tons on contracts involving a total tonnage of approximately 926,000 tons of undelivered paper manufactured in the United States.

The weighted average contract price based on deliveries from Canadian mills of about 30,000 tons of standard roll news in carload lots, f. o. b. mill in January, 1923, was $3.707 per 100 pounds. This weighted average is based upon the January deliveries on contracts involving about 378,000 tons of undelivered Canadian paper.

The weighted average market price for January, 1923, of standard roll news in carload lots, f. o. b. mill, based upon domestic purchased totaling about 11,000 tons was $3.794 per 100 pounds.

Receiver for U. S. Waxed & Coated Paper Co.

NEWARK, N. J., February 26, 1923.—Walter C. Ellis has been made permanent receiver for the U. S. Waxed and Coated Paper Company, 511 Mulberry street. Vice-Chancellor Backes signed the order when the corporation made no objection to having the temporary receivership continued. Application was originally made by the corporation's president through his counsel, Gabrielson & Stasse.

Pride Mill at Tomahawk May Be Sold

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., February 27, 1923.—Negotiations are in progress for the purchase of the Pride Pulp and Paper Company property at Tomahawk by a group of papermill men, including several Wausau people. Definite announcement concerning the new corporation and its plans probably will be made in two weeks, it was said in Wausau by F. P. Stone, president of the Wausau Sulphate Fibre Company, who is one of the organizers of the new company.

Associated Press wires last week carried a story that the Pride mill had been sold to the Wausau Sulphate Fibre Company of Mosinee and that the latter company was prepared to make rather extensive changes in the property, including abandonment of the de-inking processes in use at the mill. This was emphatically denied by Mr. Stone but he did admit that a company to purchase the property was being formed.

The Pride Pulp and Paper Company mill was built in 1920 by the Pride company which included most of the stockholders of the Tomahawk Pulp and Paper Company. Officers of the Pride company included C. B. Pride, B. A. Pride and V. E. Labbe, all associated with the Tomahawk Company. The property represents an investment of well over a million dollars and the project is far from completed. Original plans of the company included construction of mills and waterpowers that would cost in the neighborhood of $3,500,000 and would be one of the largest plants in the middlewest paper district. Two large waterpower developments of 3,000 horsepower each, one at Nigger Island and the other at Grandmother Falls, were contemplated in the plans.

Operations were started after much delay but the mill was idle a part of the winter of 1921-1922 and early last year the Combined Locks Paper Co. announced that it had leased the property for an indefinite period. This company operated the mill for a time but withdrew last fall.

It is reported that the title to the property was transferred to Montgomery, Ward and Company and the Seaman Paper Company some months ago. The Montgomery, Ward Company took much of the mill's product.

The property now consists of a large building, 354 feet long and from 50 to 87 feet wide, housing the beater, machine and engine rooms, a boiler house, 47 by 98 feet, a warehouse, 48 by 300 feet, and an office, 48 by 60 feet.

Northern Fibre Co. Mill Sold

ONTONAGON, Mich., February 26, 1923.—The unfinished mill of the Northern Fibre Company, at this place which was bid for the New England creditors by W. B. Van Allen of Carthage, N. Y., has been sold to D. C. Everest, secretary and general manager of the Marathon Paper Mills Company, Rothschild, Wis. Associated with Mr. Everest are Cyrus C. Yawkey, president of the Marathon Paper Mills Company, Walter Alexander, vice-president of the Marathon Paper Mills Company, W. H. Bissell, C. H. Worcester and other influential men who will form a company, which probably will be known as the Ontonagon Fibre Company, to operate the mill. Although the plant was originally intended for the manufacture of soda pulp, the new owners intend to equip it for the manufacture of bleached and unbleached sulphate pulp.

Malone Paper Co. Gets Wood Supply

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., February 27, 1923.—Practically the entire supply of 4,700 cords of pulpwood cut during the winter by Reynolds Brothers Company in the Adirondacks for the Malone Paper Company has been delivered to the mill. The wood was cut during the fall and early winter and has been drawn to the mill on sleds. The roads in the woods have been the best this year that lumbermen have experienced in several seasons.

RAPID PROGRESS IN DAM AT THE GRAND DISCHARGE

Estimated That This Work Will Ultimately Develop 1,500,000 H. P. Within Twenty-five Miles of Chicoutimi Which Will Be Largely Used by Pulp and Paper Concerns—January Exports of News Print Are Valued at $6,134,827—First Consolidated Statement of Groveton Paper Co., Claremont Paper Co. and Brompton Pulp & Paper Co. Makes Good Showing—Other Paper Reports.

[BY OUR REGULAR CORRESPONDENT]

MONTREAL, Que., February 26, 1923.—The biggest development that is under way in Canada at the present time affecting the pulp and paper industry is the work of harnessing the power at the Grand Discharge, where the Saguenay River flows out of Lake St. John. It is estimated that this work will ultimately develop 1,500,000 h. p. within a radius of 25 miles of Chicoutimi. The work now under way will provide a first unit of 250,000 h. p., of which it is stated Price Bros. & Co. will take 200,000 h. p. for their pulp and paper mills at Kenogami. The development is being carried out by the Quebec Development Company, of which J. E. Duke, the American Tobacco King, is president. It has been pushed forward with great energy all the winter and the roads from Chicoutimi to the Grand Discharge, usually almost deserted in winter, have been almost as busy as any of the main streets in the city of Montreal. The work of building of coffer-dam was started on January 8 and will be finished by April. It is 100 feet long and 30 feet high. This will divert one arm of the river and allow the building of a permanent dam to be carried out on the dry river bed. A good instance of French-Canadian ingenuity occurred in connection with the building of this dam. The engineers wanted a bridge across the river. To their surprise, one of the workmen stated that he would build one in a single night. They told him to go ahead. A thin cord was carried across the river by a pigeon. This was used to draw a heavier cord across and ultimately a steel cable. Then the French-Canadian got a boom of logs distributed across the river, held back by the wire cable. The boom was covered with layers of branches of trees. The water and the spray dashing against the boom and the branch froze the whole lot into one solid mass and the next morning the workmen were able to spread snow on it and drive teams across. The bridge had been built in one night.

January Exports of News Print

News print paper exported from Canada during January this year, amounted to 1,655,783 cwt., and valued at $6,134,827, slightly less than was exported in December. In January of last year the quantity exported was 1,354,024 cwt. The United States was the largest customer by far for news print last month, taking 1,633,823 cwt. New Zealand took 9,381 cwt. and Australia 8,988 cwt. Smaller quantities went to the British West Indies and South America. Of a total of 597,848 cwt. of mechanically prepared wood pulp exported from Canada in January, 226,462 cwt. went to the United Kingdom, and the remainder to the United States. The United States also took 212,031 cwt. of wood pulp sulphate, Canada's entire exports for the month. Of 273,766 cwt. of bleached wood pulp, sulphite, 10,000 cwt. went to Japan, and the remainder to the United States.

Brompton Co.'s Annual Statement

In its first consolidated statement, showing the operations and assets of the Groveton Paper Company and the Claremont Paper Company, the Brompton Pulp and Paper Company, Limited, of Bromptonville, Que., shows that over five per cent was earned on the common stock of the company after a liberal charge for depreciation, bond interest, payment of the Claremont Paper preferred dividend, and allowing for the dividend on Brompton preferred for the year. Earnings after deducting administration expense, selling expense, and income tax, amounted to $1,607,212, as compared with $1,097,784. The sum of $366,589 was written off for depreciation, as compared with $244,000, leaving a balance of $1,240,621. Bond interest required $362,783, as compared with $200,744, this increase reflecting the inclusion of the Claremont and Groveton bonds. The preferred dividend on the 2,500 preferred shares of the Claremont company required $17,500, leaving a balance of $860,338. No dividends were paid during the year on Brompton preferred. Payment of dividends would require $160,000, which would leave a balance of $700,338 available for distribution on the common shares, or the equivalent of slightly over 5 per cent on the 140,000 shares issued. The undivided surplus of $860,338 with the balance of $811,625 from the previous year, leaves a credit of profit and loss a balance of $1,671,963.

Shawinigan Water and Power Co.

At the annual meeting of the Shawinigan Water and Power Company held in Montreal during the week, a favorable report was presented showing that net earnings for the year represent 7.98 per cent of the capital stock. It was also shown that in the past 10 years the gross earnings of the company had increased by 195 per cent. J. E. Aldred, the president, in his remarks, said: "The increased activity in the paper industry throughout the province has been reflected in greatly increased demands for power on your company's system. Moreover, there is further development proceeding in the province applying to the paper business. The Province of Quebec has reached the position of being the center of the world's paper manufacture, and in the province, the St. Maurice district and the city of Three Rivers particularly are the sections of the greatest productions."

The retiring board was re-elected, without change, as follows: J. E. Aldred, Maurice J. Curran, New York; Henry J. Fuller, New York; Sir Loer Gouin, K. C. M. G.; W. S. Hart, Sir Herbert S. Holt, R. W. Kelley, Boston; Beaudry Leman, Gordon W. MacDougall, K. C., Col. G. P. Murphy, C. M. G., Ottawa; Howard Murray, O. B. E., and Julian C. Smith.

Laurentide Power Co.

The statement of the Laurentide Power Company, Limited, a subsidiary of the Laurentide Paper, Limited, which was presented to shareholders at the annual general meeting here this week, indicates that the company in 1922 experienced the best year in their history. Power sales were at a new high at $1,333,642, as compared with $1,228,187 the previous year. Total income at a new high at $1,349,030, against $1,237,562 a year ago, and net earnings after expenses at a new high at $1,149,663, as compared with $1,037,020 in 1921. Net profits available for dividends were also at a new high point, being $670,806, equivalent to 6.38 per cent earned on the capital stock. In 1921 the figures stood at $570,741, or 5.44 per cent earned. After all write offs and adjustments, profit and loss surplus to be carried forward amounted to $69,238, contrasted with $16,660 at the end of 1921.

Fraser Paper Co. to Incorporate

Notice has been given that at the coming session of the New Brunswick Legislature a bill will be introduced to revive and continue the act passed in 1920 incorporating the Fraser Paper Company, Limited, under which rights and privileges in connection with proposed mills and development upon the Tobique River were given.

W. Billings Resigns from Hoboken Paper Mills

ROSSMAN, N. Y., February 26, 1923.—Wilfred Billings has resigned his position as superintendent of the Hoboken Paper Mills Company at this place.

Important Information for Mr. Jobber

WE want you to know that we have just started another advertising campaign to your retail trade on "KANT-TEAR BAGS." This advertising is being sent to every retailer in your territory. Each state will average from fifteen to twenty thousand retailers.

When you consider a one cent stamp to each retailer you have $1,500.00 to $2,000.00 expense for stamps, say nothing of the envelopes, printed matter, etc., which are ten times the cost of the stamps; and this campaign will be kept up vigorously for six months.

Why Are We Doing This?

The answer is simple—knowing we have an exceptional article of merit and the real FOOD CONTAINER, we are advertising it to create a demand for you which means business for us—We ask you to prepare to care for the demand we create.

WHY WE SELL EXCLUSIVELY TO THE JOBBER

We deem it eminently unfair to solicit the business of both the retailer and the jobber for the practice of same carried to its logical conclusion is bound to result in the elimination of the jobber.

KANT-TEAR
WITHSTANDS WEAR

Cased Bags Cost You No More Than Baled Bags

THEY ARE
MADE RIGHT
PACKED RIGHT

SOLD ON THEIR MERITS

A CASE OF PERFECT SATISFACTION

A BETTER BAG
PACKED A BETTER WAY

WHY CASED BAGS?

Absolute Perfection of All Essentials

KANT-TEAR BAGS ARE ALL PERFECT GUARANTEED BAGS

V. B. & P. CO.

We carry a complete stock of Paper Bags and Wrapping Paper in our different warehouses which enables us to give you in addition to a quality line of merchandise, one of our essentials called

Service

W A R E H O U S E S :

ATLANTA, GA.	BALTIMORE, MD.	HOUSTON, TEX.
ST. LOUIS, MO.	NEW ORLEANS, LA.	CINCINNATI, OHIO
CHICAGO, ILL.	DALLAS, TEX.	MARINETTE, WIS.

We ask you to give us a trial and be ready to supply the demand we are trying to create for you. *"Thank You."*

Victory Bag & Paper Co. General Office: 1524 SOUTH WESTERN AVENUE **Chicago**

DEMAND IN PHILADELPHIA CONTINUES TO SHOW GAIN

Paper Distributors Believe That Present Activity Is Healthful and That the Expansion Which Began Recently Will Continue Until the Usual Summer Quietude Sets In—Demand for Paper Stock Is Somewhat Quieter But No Further Price Revisions Have Been Made—H. J. Hogg Co. Organizes to Engage in the Manufacture of Paper Bags—Paper Stock Dealers to Hold Banquet.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, February 27, 1923.—February is closing with a steady continuance of that increased activity in all grades of printing paper and almost to a like extent in coarse paper which evidenced itself before the month was half over. While the satisfactory characterization of trade is general by the leading distributors, they are as one also in diagnosing the character of the market as being entirely sound and wholesome and as evidencing a staying power indicative of the fact that the consuming market has now struck a pace which they believe will continue, with increasing stride, until the usual summer quiet sets in.

The week passed without further revision of prices either for paper or for paper stock, although the mill demand for the latter eased off considerably during the last seven days. Thus far, however, the stock dealers have not been required to make a downward revision of their prices because while mill buying is comparatively slight, supplies of stock which are being received also are comparatively small and are only about sufficient to meet the day to day requirements. Though board prices went off a week ago, mixed and commons have not yet been affected and the stock packers are of opinion that the easing off in the board market is of but a temporary character and that after the termination of what in their opinion is a condition of waiting, the former prices will be restored. The mills are still taking about all that is being offered of the lower grades of paper.

Paper Stock Men to Celebrate

The paper stock dealers who received a somewhat belated invitation to the Graphic Arts Night banquet and who as a consequence were not so largely represented proportionately as other industries, propose this year at least to continue their separate celebrations held for more than a decade. There is in the treasury quite a substantial sum and this will be expended on quite an elaborate vaudeville entertainment in connection with the forthcoming banquet. During the week, a meeting of the association was held and a committee was appointed consisting of Frank A. D'Miller, Thomas A. Kenny, Jr., and William McGarity to make arrangements for a banquet to be held as close to April 19 as possible; that time being selected in order not to conflict with the banquet of the New York trade which is to be held during the preceding week and which will be attended by a Philadelphia delegation. Place of meeting and definite time were left to be decided on by the committee.

Garrett-Buchanan Building Progresses

Rapid progress is being made, despite the necessity for keeping undisturbed the current of business, in the erection of the six-story building at 3 and 5 South Marshall street, by the Garrett-Buchanan Company for a warehouse and a garage and shipping department. It is expected that the new structure will be ready for occupancy in about three months and when it is the adjoining building owned by the company will have an additional story placed thereon so that the South Marshall street frontage will be of a uniform height of six stories. These improvements will give the company a consolidated building running from 12 to 20 South 6th street and from 3 to 11 South Marshall street, and as a consequence the largest area under one roof occupied at the present time by any Philadelphia distributor.

H. J. Hogg to Engage in Own Business

Harry J. Hogg, for the last five years a member of the firm of Shuttleworth, Hogg & Mather, now located at the N. W. corner of Front and Arch streets, is planning to open about June 1, his own business trading under the name of the H. J. Hogg Company and to engage in the manufacture of all kinds of bags and sacks, flats and square opening. He has secured a lease on the five-story building at 127 Arch street, and this is being completely modernized and the necessary machinery equipment being installed. At the present time, however, he has begun trading under the new name from an office in the Stephenson Building, 165-167 North Front street, carrying a stock of bag and coarse paper in the warehouse at 134 Race street. He has the accounts of several mills, and is engaged in jobbing their products. While he has withdrawn from active interest in the Shuttleworth, Hogg & Mather Company, he still retains his financial equity in it. Mr. Hogg has spent a business lifetime in the coarse paper trade. For seventeen years he served as the coarse paper salesman with the firm of Henry L. Wilson's Son, and for half a decade was engaged in business for himself trading as the H. J. Hogg Company, starting at 105 N. 2nd street, and subsequently removing to 133 Arch street, later joining the newly organized Shuttleworth, Hogg & Mather Company, a partnership allied with the Shuttleworth Keeler Company of New York. Mr. Hogg is also the owner of a large garage business at Front and Race streets, known as the State Garage. He is a son of the late magistrate, George Hogg, who has been an active figure in the politics of the Quaker City, having for many years presided in the Court of Southern Philadelphia. The Shuttleworth, Hogg & Mather Company, which recently removed from 128 N. 2nd street to the present location N. W. corner Front and Arch streets will continue under the old title with C. W. Mathers as president, principal stockholder and active head and Wm. S. Graham who spends most of his time on the road as secretary.

Keystone Mills Making Kraft

So successful has been the engagement of the Keystone Paper Mills Company of Upper Darby in the manufacture of crafts and manila papers on which it recently concentrated attention, that it is now devoting its entire paper manufacturing facilities to the production of these grades. During the war, the Mills specialized on the manufacture of water-leaf products, continuing until about a year and a half ago. At that time there was installed a complete waxing department which has kept the plant busy running to capacity. Although the past year the firm continued to manufacture crafts to full production limit it, however, had curtailed the manufacture of manila to only half of its possibilities, but the renewed demand for both manila and the kraft has necessitated the increased output and the two shift employment force. It is now booked for several months ahead and producing twelve tons per day.

Wonder Paper Excites Interest

In the edition of January 18 of the PAPER TRADE JOURNAL there was published an account of an off-set paper successfully experimented on by Lafayette Cates in charge of the pressroom of the Farm Journal Company, South Washington Square, christened by him the Wonder Paper and pronounced to be the most remarkable product of its kinds with which he had ever come into contact. That item so widely was read and excited such profound interest on the part of paper mills, paper distributers, publishers and printers, that both Mr. Cates and A. Sydney Jenkins, general manager of the *Farm Journal*, have been in receipt of letters, tele-

(*Continued on page* 32)

FARREL
REG. U.S. PAT. OFF.

PAPER MILL ADVERTISEMENT No. 5

In the Paper Industry

Farrel Calenders
Farrel Rolls
and
Farrel Roll Grinders

—have always received preference wherever the reputation of a Paper Mill depends upon high quality of product.

HAVE you facilities for handling, packing and shipping heavy rolls?

If not, a great deal of trouble and an unnecessarily heavy expense are involved when you send your rolls away for regrinding.

The rolls themselves, moreover, may be damaged in handling and priority of other work at the plant which receives them may delay their return.

All this can be avoided if you install a Farrel Roll Grinding Machine in your own plant. Tell us the diameter and the length of face of your largest roll and we will tell you the cost of the Grinding Machine you require. You can then more closely figure the advantages of the investment.

FARREL
Established 1848
FOUNDRY & MACHINE COMPANY
ANSONIA, CONN.
Branch Office
802 Swetland Bldg., Cleveland, Ohio
Branch Plant
Buffalo, N.Y.

DEMAND IN PHILADELPHIA CONTINUES TO SHOW GAIN

(*Continued from page* 30)

phone calls and personal visits from those interested and whose attention were called to the subject by the PAPER TRADE JOURNAL. Several samples of American paper, the manufacturers of which believe that it possesses the same quality of the imported article referred to have been received and this week a specimen supplied by the Diamond State Fibre Company will be tried out. J. H. Smithwick of the engineering division of the Continental Paper and Bag Mills expressed interest in the Wonder Paper as described in the PAPER TRADE JOURNAL and asked to be supplied with samples for experimentation. Thus far the *Farm Journal* has been unable to replenish the limited supply which it secured from abroad through a Boston importing firm, but is hopeful of securing more shortly and until it can do so is unable to furnish the samples requested. The company now has been operating for the last three months on this paper and during that time entirely has dispensed with the many times more expensive offset roll used by it and almost universally used in printing plants.

E. H. Farr & Co. Plans

With the discontinuance of the Philadelphia branch of the Gatti-McQuade Company, formerly conducted at 610 North American street, much of the equipment has been disposed of to E. H. Farr & Co. which recently secured a charter of incorporation under the Pennsylvania laws for the purpose of conducting a paper stock and waste business. The personnel of the Farr Company is made of Edgar H. Farr, who formerly was Philadelphia manager of the Gatti-McQuade Company and Charles Swanson, who also was employed with that concern. The firm acquired two buildings, one at 2008 E. Arizona street, where are located the offices and part of which will be devoted to a warehouse and another building just across the street at 2007 E. Arizona street for the purpose of additional warehousing facilities.

Chas. Koenig Takes Farrell Co. Business

The former business of F. W. Farrell Co., 1225 Real Estate Trust Building, has been acquired by Chas. F. Koenig, who for ten years was a salesman with the company. Mr. Koenig will continue to sell most of the lines handled by Frank W. Farrell during his business history, which began back in 1897. Mr. Farrel maintained a large following among the printing and publishing trades of the city and was one of the best known men catering to this class of converters. In addition to the lines of book papers handled by the Farrel Company which will be retained on the list, Mr. Koenig will add a line of bonds, writings, drawings and tracing papers adapted to the printing and engineering trades.

Pritchard-Lewis Co.'s Celebration

There is approaching the 66th anniversary of the entrance into the retail and jobbing coarse paper and bag business of Jonathan Pritchard, whose business interests have been continued by his son Wm. T. Pritchard and associate Robert Lewis and now conducting business as the Pritchard-Lewis Company at 1004 South 20th street. The firm enjoys the distinction of being quite the oldest firm of its kind in the south Philadelphia district. Mr. Pritchard, the founder, developed the business for many years under his own name and it is continued by his son, but some years ago a partnership was formed with Mr. Lewis, owner of the similar business of Kilpatrick Brothers and successor to Robert Paul, a firm which was contemporary with the Pritchard firm in the downtown section.

New and Personal Items

J. C. Hilly, formerly in the twine business, and mill representative with offices at Indianapolis, Indiana, is now in charge of the twine department of Nathaniel Saxe Company, 320 Race street. Arthur Silberman, a recent graduate of State College, and son of Leo Silberman of Elkins Park and a well known braid manufacturer, has joined the sales force covering Philadelphia and vicinity with the firm's line of wrapping paper. In order to accommodate the trade the Saxe Company has installed a private branch telephone exchange and announces that the new 'phone numbers are Bell, Market 3011 and 3012. The Saxe Company is experimenting with a few numbers of papers for the box manufacturing trade, with a view of eventually extending the line to cover the full requirements of this industry.

The Franklin Paper Company has moved to 810 Sansome street, where both offices and warehouse are located.

The A. M. Collins Manufacturing Company were hosts last night to the sales force of the Garrett-Buchanan Company, one of its Philadelphia distributors at a dinner and educational meeting at the Bourse. Addresses were made on behalf of the company by President Collins, sales manager Winslow and others.

President Norbert A. Considine of the Paper House of Pennsylvania who suddenly was called to New Orleans last week because of the arrival there of a damaged cargo of news print and almost simultaneously the death of the firm's resident broker there, has informed his firm that the boat, the *Waarfeld* came into the harbor with fourteen feet of water in her hold and that the Paper House's stock was a complete loss. The shipment consisted of about fifty tons. It is understood that on the same vessel there was a shipment of seven hundred tons of news print for the Hudson Trading Company of New York.

Fire which swept the two-story factory building at 167-169 West Oxford street, causing a loss estimated at $10,000 destroyed the plant of the Toll Shopping Bag Company, which occupied the second floor of the building. The blaze started in the rear of the first floor and rapidly spread through the building, resulting in a complete loss.

Edward D. Hemingway of the E. D. Hemingway Company, paper stock dealers, 243 Elbow Lane, who has been making an extensive stay in the Maine woods, returned to Philadelphia headquarters for a brief stay and is now sojourning in Florida, where he will remain for the balance of the winter.

Another sojourner in the South, also a prominent member of the stockdealers' fraternity is John Murphy, of Daniel I. Murphy Company, who leaves this week for Palm Beach and other points in Florida. He will also visit the Nassau in the Bahamas.

Mr. Beck Corrects Wrong Impression

Edward Beck, secretary of the Canadian Pulp and Paper Association, has sent a letter to the papers protesting against the statement of Representative John Jacob Rogers, of Massachusetts, that, "Canada has always been ready to declare embargoes on shipments of various articles into the United States, notably wood pulp." He says: "Mr. Rogers, like a lot of other Americans, appears to be laboring under a misapprehension. Canada has never declared an embargo on shipments of wood pulp to the United States. It would be very much against her interests to do so. Mr. Rogers is probably confusing his facts. Some of the provinces do impose manufacturing conditions in exchange for the right to cut timber from their Crown lands. This is an entirely defensible proceeding and has no bearing on the question of coal shipments. But, even so, these regulations do not constitute an embargo. More than a million cords of pulpwood are shipped from Canada to the United States every year, despite our rapidly dwindling supply and despite the certainty that we shall soon have none to spare if our own industries are to be kept in operation."

Lockwood's Directory of the Paper Trade is invaluable to all paper men. Price $7.

More Bird Screens

At the

Arrowhead Mills Inc.

Fulton New York

These Five

Bird Screens

supply 100 tons of felt paper stock to the paper machine every day

BIRD MACHINE COMPANY

South Walpole, Massachusetts

Western Representative:
T. H. Savery, Jr., 1718 Republic Bldg., Chicago, Ill.

Canadian Builders of Bird Machinery:
Canadian Ingersoll-Rand Co., Ltd., 260 St. James St., Montreal, Quebec.

12,000 Tons of Paper pass through Bird Screens Daily

4918

PAPER MILLS IN ONTARIO ARE SATISFACTORILY BUSY

Business With Paper Merchants in Toronto, However, Has Not Been Encouraging of Late, But an Improvement Is Expected in March—Annual Report of Bird & Son Will, It Is Understood, Show a Good Increase in Net Profits—Because of New Agreement Just Effected It Is Believed Almost Certain That New Plant of Great Lakes Co. Will Be Located Near Fort William.

[FROM OUR REGULAR CORRESPONDENT.]

TORONTO, Ont., February 26, 1923.—Business in the paper line continues good with the mills but the past month was not so satisfactory with most of the paper merchants owing to the severe cold weather and epidemic of sickness. The temperature has now moderated and the majority of paper dealers, who have been ill, have recovered. It is expected there will be a material improvement in conditions during March. Printers have been very quiet and retail business generally dull for the last three or four weeks. In rags and paper stock there has been a fair turnover and new cotton cuttings of all grades are in good demand. The pulp market has been off for some little time but is soon expected to improve. News print mills are rushed.

Good Increase in Net Profits

The annual report of Bird & Son, Hamilton, whose mills are in Pont Rouge, Que., which will soon be out, will, it is understood, show a good increase in net profits over those of the previous year. Orders on hand so far this year for felt roofing are said to exceed considerably those received up to the same date last year. An issue of $400,000 of the seven per cent cumulative preference stock of the company was made in June last and the stock has been widely distributed in the market. The shares will shortly be listed on the Toronto stock exchange.

Fort William Gets Site for Pulp Mill

Provided the Ontario Government can find a solution for the legal and engineering difficulties raised, the Hydro Power Commission approved the agreement submitted by members of the Gregory Commission for the solution of the Nipigon development troubles. This agreement provides for the sale of 22,000 volt power at eighteen dollars per horse power to the Great Lakes Pulp and Paper Co. delivered at the plant. The Ontario Government has already approved this agreement and has promised to confirm it by an order-in-council. The agreement practically means that the proposed plant of the Great Lakes Company will be located at the Mission site west of Fort William. The alternative agreement submitted by Port Arthur, which city also wanted the industry, was not accepted. The fight between the sister municipalities was a lively one and Fort William has won out, according to the present decision.

Provincial Paper Mills Elect Officers

The annual meeting of the Provincial Paper Mills, Limited, was held in Toronto recently and a satisfactory report of the past year's operations was adopted. I. H. Weldon was re-elected president, T. A. Weldon, vice-president, S. F. Duncan, treasurer, and Walter S. Barber, secretary. Formerly the office of secretary-treasurer was combined and held by Mr. Duncan, Mr. Barber is, therefore, a new member of the executive. The regular quarterly dividend of one and three-quarter per cent on the preferred and one and one-half on the common stock was declared.

Interlake Tissue Mills Had Good Year

The annual meeting of the Interlake Tissue Mills Company, Limited, whose head office is in Toronto and mills at Merritton, Ont., was held last week and an encouraging report on the activities of 1922 was submitted. The plant is running full at the present time. George Carruthers was elected president for another term, I. H. Weldon, vice-president and treasurer, and S. F. Duncan, secretary. The directors for the coming year are Charles Dewing, Alex Fasken, S. B. Munroe and A. B. Connable.

Mr. Sherriff Returns from Trip Abroad

W. H. Sherriff, of the Hodge & Sherriff Paper Company, Toronto, selling agents in Canada, France and Great Britain for the Wayagamack Pulp and Paper Company of Three Rivers, Que., returned recently from an extended trip to Great Britain where he visited his partner, W. S. Hodge, of London, Eng. Mr. Sherriff reports that the demand for kraft paper abroad is increasing and that the English market generally is looking up. Confidence is returning and business growing brighter. He found that there was a strong feeling for Canadian paper products, which will be strengthened with the revival of trade.

Taking Out Large Quantities of Pulp Wood

The Porcupine Pulp and Lumber Company whose plant is located at Hoyle, Ont., is taking out large quantities of pulpwood and rossing it. This is shipped to the paper mill of the company at Niagara Falls, N. Y., the Cliff Paper Company. There is a great deal of pulpwood being taken out in Northern Ontario this season and the past winter has been favorable for operations. Men have been plentiful of late months at most camps and good progress has been made with the work. It is expected if the paper business continues active there will be a raise in the price of wood in the not distant future.

Buntin, Reid Co.'s Business Sold

The old established wholesale paper business of Buntin, Reid Company, 13 Colburne street, Toronto, at the head of which was the late Alex Buntin, has been purchased from the executors of the estate and will be carried on as usual at the old stand under the name of Buntin, Reid Company, Limited. T. J. Macabe, formerly assistant treasurer of the Canadian Northern Railway, Toronto, is president of the new organization and John Martin of Winnipeg, is the vice-president. George H. Allen, of Winnipeg, has been elected a director and sales manager. Mr. Martin, who is a former president of the Canadian Paper Trade Association and one of the most widely known paper distributors in Canada, has been in Toronto completing the deal. He is head of the John Martin Paper Company of Winnipeg and Calgary and will continue these interests. The new firm of Buntin, Reid Company, Limited, will establish a mill order department to render special service for imediate requirements. Practically the entire staff of the former organization is being retained.

Notes and Jottings of the Industry

Charles F. Mansell, of the Howard Smith Paper Mills, Ltd., staff, Toronto, and one of the veteran paper salesmen of Ontario, who has been ill with the flu, is able to be around again.

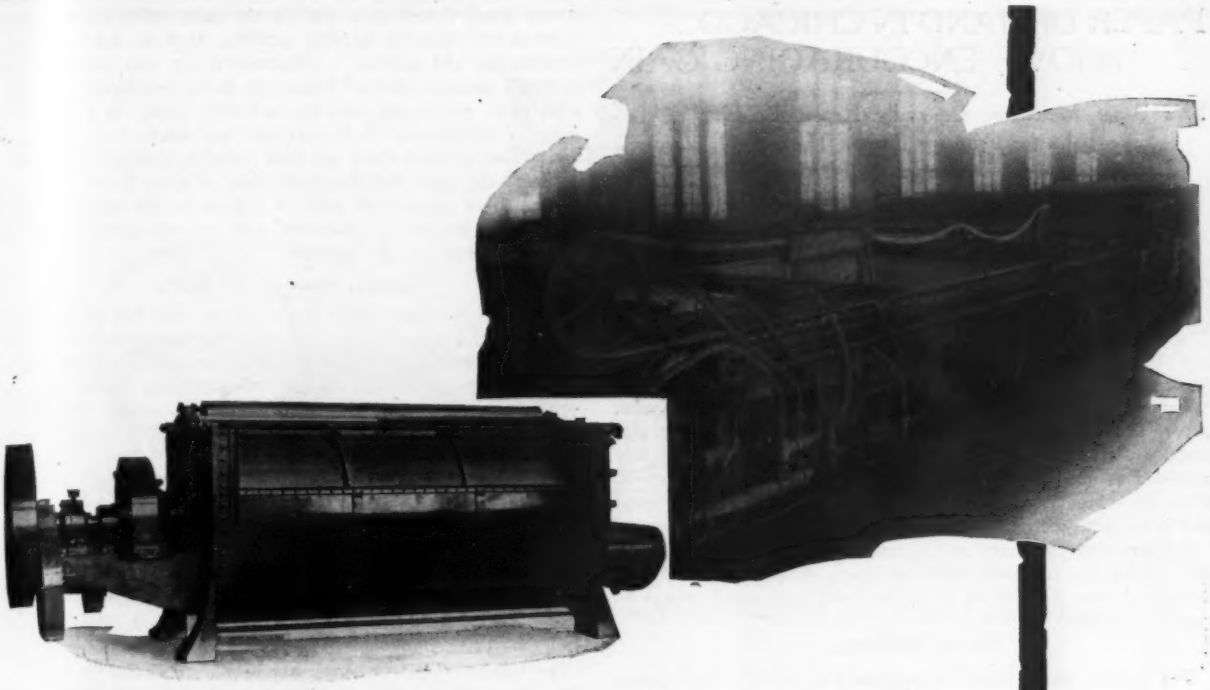
The Georgetown plant of the Provincial Paper Mills, which was closed for several days owing to a break in the drive shaft of the engine, has resumed operations.

C. H. Cummings of the Chemical Paper Company, Holyoke, Mass., was a caller on the trade in Toronto during the past week.

E. A. Schoefield, head of the Schoefield Paper Company of St. John, N. B., and a former Mayor of that city, was a welcome visitor to the trade in Toronto during the past few days.

No. 3 slasher of the Abitibi Power and Paper Company at Iroquois Falls, Ont., is now in operation. The capacity is 1,200 cords of pulpwood daily and the refuse from the slasher is carried on a belt conveyor to the boiler house where it is used for steam purposes.

The pulp plant of the Beaver Board Division of the Beaver Products Company, Limited, which is situated at Thorold, Ont., is now in operation after being shut down for some time. The output of ground wood pulp is being sold on the market.



A P.A.P.A. *Rotary Inward-Flow* Screen *at the Wet End of* Your Machine *means* Better Paper

Better, cleaner paper, produced at lowered costs is the aim of every far sighted manufacturer. Users of P.A.P.A. rotary inward-flow screens tell us that they are obtaining these results. One manufacturer, whose name we will furnish on request, writes:

"As compared with our flat screens the P.A.P.A. makes cleaner stock, requires little attention, is simple and solid and the screen runs evenly and noiselessly. The power consumed is small."

The Paper is Screened by Suction

All shaking and vibration is eliminated and as a result it wears much longer, is noiseless in operation and can be placed directly on the floor without a foundation. It has a large capacity and requires very little attention. You need P. A. P. A. rotary inward-flow paper screens in your mill. Do not fail to get more information regarding them.

Valley Iron Works Company

Plant, Appleton, Wis.
New York Office, 350 Madison Ave.

Write for Booklet

We will be glad to send a pamphlet giving more particulars on P.A.P.A. rotary inward-flow screens. Write for it today. Our engineering department is ready on request to show you how P.A.P.A. screens can work to advantage in your mill.

PAPER DEMAND IN CHICAGO SHOWS ENCOURAGING GAIN

Five Paper Merchants Especially Report Business Satisfactory—Sales for February Exceed Those for January and Expansion in the Demand Is Still Taking Place—General Improvement Is Attributed to the Stabilized Prices Which Have Prevailed for Some Time Past—More Active Demand Is Also Being Experienced for Coarse Paper—F. W. Leadbetter Tells About New Mill Venture.

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, Ill., February 26, 1923.—Fine paper merchants feel quite encouraged with the way business is moving at present. Distributors, catering especially to the printing and publishing trades, report their general business as "fine." February figures to date indicate that this month will prove better than January, which was recorded as good. To date, sales for the month are in excess of those of February, 1922. The demand for fine papers is general and is for both merchandise out of stock and for direct shipments.

Printers and publishers in Chicago and the immediate vicinity are looking for continued good business, which naturally will be reflected in the demand for fine papers and such coarse papers as manila and kraft.

Prices Stabilized

The general improvement is attributed to the stabilized prices that have prevailed during the past six months. Buyers are satisfied that prices are about on the right level; they say there are no indications of changes in the near future and they are consequently placed in the position of quoting prices on their finished work with an assurance that if orders are not placed immediately, they will hold good for weeks and possibly a month. Fluctuating prices are annoying and embarrassing to converters of paper into printed matter as well as specialties. Stabilized prices should continue the present business for an indefinite period.

Coarse papers are coming into greater demand, but competition is keen. This branch of the trade can be said to be healthy, with prospects bright. Prices are unchanged with the exception of wood tag boards, which have been increased one-half cent to 5@5½.

Transportation difficulties are again delaying arrival of shipments. This is especially true of shipments from the East. During February it has taken twice as long as usual to get some shipments through as was experienced prior to February 1. Weather conditions, with cold and heavy snows are largely blamed for the present conditions, although it is recognized that the shortage of cars is a prominent contributing factor.

Paper Stock Less Active

A lull has occurred in the hitherto active demand for paper stock and prices offered are somewhat lower. Transportation and weather conditions have slowed up shipments. Far-seeing mills, anticipating winter troubles, have loaded up as heavily as their plant facilities will permit and it is believed that little trouble will be experienced before delayed shipments are received. Continual snowfalls in Chicago during the past two weeks has retarded the collection of old paper stock.

F. W. Leadbetter in Chicago

F. W. Leadbetter, president of the $1,500,000 Columbia River Paper Mills Company, who has been in Chicago, has returned to Vancouver, where final plans for construction of a paper mill, box factory, sulphite mill and sawmill plants are being completed. The work of building the plants will have been commenced by March 1. In commenting on the selection of Vancouver as the manufacturing point, A. G. Raich, fiscal agent of the company, said: "Vancouver was selected as a site for the paper mills because of its location and splendid shipping facilities, both by water and rail. Besides this and perhaps as important is the vast supply of raw materials easily available. Vancouver is the best located town for a big paper mill of any place on the Pacific Coast. In Salem, Ore., where a similar plant is in operation and where a large proportion of our common stock has been subscribed, there is some misunderstanding regarding the manufacture of straw board. The Columbia River paper mills will not engage in the manufacture of straw board and has no connection with any concern contemplating the manufacture of that product."

General News of the Trade

The Midwest Paper Mills, Fuller Track, 500 feet south of the south end of Logan avenue, Joliet, Ill., has been incorporated with a capital of $95,000 and 1,000 shares of non-par value stock. The firm will manufacture and deal in wall paper and accessories. Incorporators are Thos. J. Reardon, William E. Lamb, William M. Kearney. Willis E. Thorne, 1048 Otis Building, Chicago, is correspondent.

The Regenstein Envelope Company, of Chicago, has decreased its capital stock from $150,000 to $1,000.

The Sargent-Morse Paper Company has been established at 315 Chestnut street, Rockford, Ill. The company has been incorporated with a capital stock of $25,000 and will manufacture and deal in paper and paper board products. The incorporators are F. S. Morse, H. O. Bray, Rachael B. Sargent. Garrett, Maynard and Hull, 508 Trust Building, Rockford, are correspondents.

The Hopper Paper Company has been incorporated at Taylorsville, Ill., with a capital of $350,000 to deal in and manufacture paper, paper boxes, labels, goods, etc. The incorporators are Marquis E. Eaton, Kenneth M. Fiske and Richard Y. Hoffman. Defrees, Buckingham and Eaton, 1750 105 South La Salle street, Chicago, are correspondents.

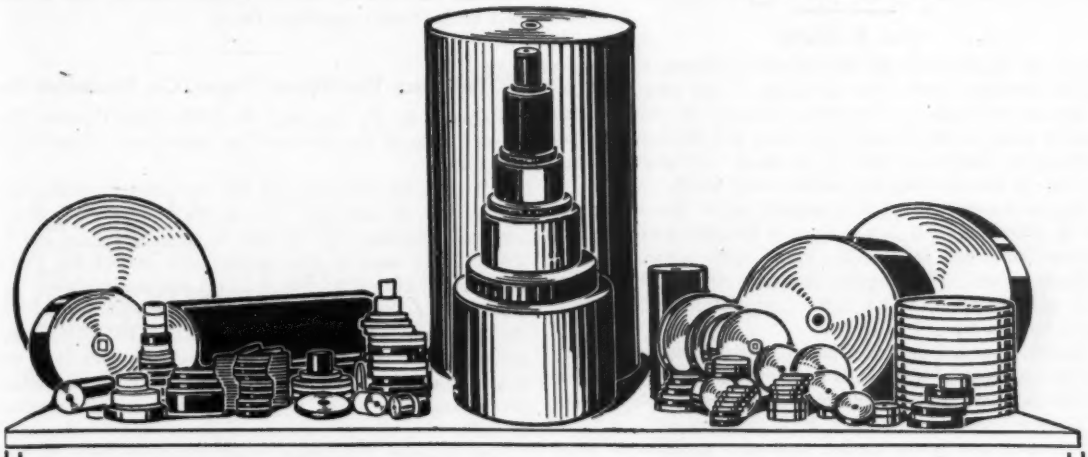
The Victory Bag and Paper Company, with offices and warehouse at 1524 South Western avenue, is now carrying a full stock of all grades of paper bags, especially the "Kant-Tear" kraft bag. The company also carries a complete line of wrapping papers. President A. Pareira reports business as good and prospects very bright.

Alexander Thompson, of the Champion Coated Paper Company, was a Chicago visitor the first of the week.

Eddy Paper Company stock climbed up a few points this week on the Chicago Stock Exchange, but closed today at 27½, a gain of one-eight point over Friday's close.

To Represent Uehling Instrument Co.

PATERSON, N. J., February 26, 1923.—The Uehling Instrument Company, has just appointed two new agents, John E. Arnold, 15½ South Fourth street, Tulsa, whose territory is the State of Oklahoma, and H. R. N. Johnson, 917-A Marquette avenue, Minneapolis, whose territory is Minnesota, North Dakota and South Dakota. Both of these agents are well acquainted in the power plant field, and are thoroughly conversant with the problems necessitating the use of Uehling CO_2 recorders and other Uehling gauges. The Uehling Chicago agent, Walter C. Lange, 20 West Jackson Boulevard, recently returned to the Chicago territory after two months spent at the Paterson plant assisting in the development of the new Uehling CO, or combustible, recorder Mitsui & Co., have just been appointed exclusive representatives in Japan and China for Uehling CO_2 Recording Equipment and other Uehling power plant instruments and gauges. The head office of Mitsui & Co., is located in Tokio and their New York Branch Office is at 65 Broadway. Many Uehling Installations have been made in Japan and China without the aid of local representatives but it is believed that with the co-operation of the very able engineering department of Mitsui & Co., the Japanese and Chinese Uehling customers will be served to the very best advantage.



PAPER SALESMEN SAY:

"It is often easier on the voice to sell good rolls of not so good paper than not so good rolls of good paper."

PAPER MAKERS SAY:

"It is always easier on the temper to make good shipping rolls out of a not so good reel on a good Roll-Winder than not so good rolls out of a good reel on a poor Winder."

CAMERON WINDER USERS SAY:

"Cameron Machines turn out good rolls from good paper and as good rolls from paper not so good."

PAPER CONSUMERS SAY:

"ROLL, CAMERON, ROLL!"

NOTE:

Cameron Machine Co. makes its good roll-winders at Brooklyn, New York. Office address, 61 Poplar Street.

Obituary

Oren E. Martin

POTSDAM, N. Y., February 26, 1923.—Oren E. Martin, well known throughout Northern New York, as a paper and pulp manufacturer, died at his home in Norwood, February 8. Mr. Martin had been in poor health for some little time and his condition had been critical for some days prior to his death. An ailment which effected one of his legs was the cause of his death.

Mr. Martin was for some years engaged in the hub and wheel business in Norwood. His first venture in the pulp trade was the establishment of a mill at Yaleville, a few miles below Norwood on the Racket river. The company prospered and Mr. Martin retained its management up to the time of his death, associated with him, were his two sons.

Mr. Martin interested the late Charles R. Remington of Watertown in the feasibility of paper mills on the powers of the Racquette at Norfolk and Raymondville with the result that the Remington-Martin Company was formed which built the large mills at these points now controlled by the Carlisle interests. Mr. Martin, however, disposed of his interests in the big group of mills some time ago, prior to their purchase by the Hannas in fact.

Mr. Martin was known as a keen business man and had a large acquaintance in the North Country. He was a familiar figure in the pulp and paper trade in this section. He was 73 years of age.

Benjamin Vernon

WINDSOR, Conn., February 26, 1923.—Benjamin Vernon, for many years head of the Vernon Brothers Paper Mills at Rainbow, died February 17, at his home in that village, following an illness of several weeks. He started operations of the mills in 1886 and retired in 1918.

He was born in Roanoke. Genesee County, N. Y., in 1857. As a young man he went West and engaged in mining operations in Colorado and New Mexico. In 1886 he came to Connecticut and with other members of his family founded the Vernon Paper Mills. The mills manufactured high grade copy book, tissue paper which was used for many years extensively by railroad companies.

This business he conducted with his brothers until his retirement. He is survived by his wife, who was Miss Helen B. Kay of Rainbow, whom he married in 1888, also one son, George Vernon and a daughter Miss Dorothy Vernon both of Rainbow; also one sister, Miss Elizabeth Vernon of Cleveland, Ohio.

Mr. Vernon was a member of Washington Lodge of Masons of Windsor. The funeral was held at his home in Rainbow. Burial took place in Elm Grove Cemetery in the family lot.

John W. Doyle

NEW HAVEN, Conn., February 26, 1923.—John W. Doyle, vice-president and general manager of the National Folding Box Company, of New Haven, died February 12. Mr. Doyle was sick but a few days, his death being caused by pneumonia. He had just returned from Hot Springs, Ark.

Mr. Doyle was born in Lee, Mass., 55 years ago last July, and began life as a printer on the paper of his home town, the "Valley Gleaner," with which he remained until he was 21. He later became connected with the Cornell Box Company, of Shelton, which company was soon after joined to the National Folding Box Company. He was very active in all the affairs of New Haven and was a member of many of the organizations of the city, among them being the Union League, in the Farmers' Club, the Elks of Derby, and the Chamber of Commerce.

He is survived by his widow, Mrs. Catherine Doyle, and one daughter, Mrs. Walter P. Baldwin. The funeral was held at the home of his daughter, 76 Edward street, East Haven, with solemn requiem mass at St. Mary's Church. Burial was in the family plot in St. Peter's cemetery, Derby.

Paterson Parchment Paper Co. Increases Stock

PASSAIC, N. J., February 26, 1923.—The Paterson Parchment Paper Company has increased its capital stock from $3,000,000 to $5,000,000.

Not long ago the company was fortunate in purchasing an excellent tract of land near Bristol, Pa., consisting of seventy acres with two thousand feet of deep water frontage on the Delaware River. This tract is also on the main line of the Pennsylvania Railroad, which will provide excellent shipping facilities. A modern plant will be erected on this site and when finished will represent the last word in paper mill construction and equipment. Plans are completed and practically all machinery has been contracted for. Building operations will start as soon as the weather will permit and it is hoped to have the new mill in operation early in 1924.

The Paterson Parchment Paper Company built its first small plant in this city on Eighth street in 1889. Since then it has grown to be one of the most prominent industries in Passaic.

The company was founded in 1885 in Paterson, and in a few years outgrew its original quarters in the "Old Colt Gun Mill Yard." In 1889 the company moved to Passaic to occupy its new plant located on Eighth street. Since the very beginning the business has had a healthy continuous growth until it is now the largest of its kind in the world.

About twenty years ago the Paterson Parchment Paper Company purchased the Megargee Paper Mills at Modena, Chester County, Pa. The paper is made at this mill and shipped to Passaic to be converted and finished. It is then re-shipped to all parts of the United States, Canada and many foreign countries.

Paterson Vegetable Parchment is used as a protective wrapper for delicate moist food products such as butter, ice cream, cheese, meats, fish, etc. Thousands of retail grocers, delicatessen and meat stores use it for wrapping their goods.

The Paterson Parchment Paper Company has helped to improve the merchandising methods of many branches of the food industry through the protection offered by its product, which is odorless, tasteless, moisture, grease and air proof.

New England Paper Business Improving

BOSTON, Mass., February 28, 1923.—Encouraging reports came this week from leading paper merchants of New England. Dealers generally report an increased movement of higher-grade papers, the demand being above the production. On the whole, there is a tendency toward an upward revision of all grades, but the Boston market is particularly strong on the better varieties, according to the most representative authorities.

Boston paper men report that freight movements are still troublesome, particularly over the New Haven railroad, on account of embargoes due to the continuance of congestion caused by snow and ice at freight terminals. Western and southern movements are somewhat easier. Straw board continues high and foreign boards thereby becomes a factor in the market.

The mills report paper stock difficult to obtain, and high in price, and some are shut down for this season. And the outlook is for a continuance of board prices firm at present level, for four or five weeks to come at least.

The Manufacturers' Paper Company, located for many years at the Weld building, 176 Federal street, has moved to new quarters in the Rice building, 10 High street, it was announced by E. B. Fullerton, Jr. The firm will be located in spacious rooms on the ninth floor.

Established 1886

Growth
Responsibility

The continued expansion of this organization and the widening scope of its activities are, we believe, a source of genuine satisfaction to our clients.

We have grown with them. They have grown with us. The success of the one has been closely and intimately related to the success of the other.

This, indeed, is an admirable token of the jealous and zealous care with which we guard the interests of our customers. They and we are inter-dependent. For thirty-five years, we have had an abiding realization of that responsibility and of what it means to both of us.

M. GOTTESMAN & COMPANY

—INCORPORATED—

18 East 41st Street

New York, N. Y.

U. S. A.

New York Trade Jottings

The Convention of the National Association of Waste Material Dealers has been set for March 20-21.

* * *

James T. Mix, of the Northwest Paper Company, of Cloquet, Minn., was a visitor in New York the early part of this week.

* * *

R. S. Kellogg, secretary of the News Print Service Bureau, has sent Bureau Service Bulletin No. 61, dated February 19 to members.

* * *

Roderic Olzendam, of the Industrial Relations Department of the Spanish River Mills, Sault Ste. Marie, was among the New York trade visitors Monday of this week.

* * *

Philip T. Dodge, president of the International Paper Company, 25 Broad street, New York, went to Boston last Sunday on business. He is expected back in New York this Thursday.

* * *

Colonel W. E. Haskell, vice-president of the International Paper Company, is winding up his visit in Savannah, Ga., and is expected to return to the city the latter part of next week.

* * *

Frank Levy, paper, envelope and stationery dealer, formerly of 483 Broadway, New York, has moved to his new location at 636 Broadway. The new phone numbers are Spring 4620-1-2.

* * *

The Ætna Paper Mill Supplies Company, of Brooklyn, has been incorporated by F. Lepre and P. Brancolo with a capital stock of $10,000. A. Brancato, of 241 North 9th street is their attorney.

* * *

Emanuel Salomon, president of the newly-formed Emanuel Salomon Corporation, 300 Madison avenue, New York, sailed via the steamer *La France* for a month's tour abroad, leaving last Wednesday.

* * *

J. C. Wright, director of the Federal Board for Vocational Education, of Washington, D. C., visited R. S. Kellogg, secretary of the News Print Service Bureau, at his offices, 342 Madison avenue, New York, Monday morning of this week.

* * *

"Newspaper Makers at Work" is the title of an interesting article in *Newspaperdom* of February 8, written by Jay W. Eff. "When You Feel Overworked Just Think of Nelson H. Botsford of the *New York World*," is the sub-head, and the story following really makes you feel as though you've been loafing on the job.

* * *

The Harris Paper Company, Inc., of 31 East 10th street, New York, has filed schedules in bankruptcy, listing liabilities of $114,168 and assets of $37,000, the main items being unliquidated claims, $24,000 and stock and fixtures, $12,000. The principal creditors are the American Writing Paper Company, $9,081; Crocker-McElwain Company, $7,287; R. H. Thompson, $5,271; Berkshire Hills Paper Company, $10,430; Neenah Paper Company, $14,270; Carew Manufacturing Company, $6,611, and the Marr-McDonnell Company, $6,062.

Paper Exports Show Decline

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 19, 1923.—John T. Matthews, chief of the Paper Division of the Department of Commerce, has the following to say regarding paper exports for 1922:

The final figures for 1922 on exports of paper mill products amounting to $24,152,567, compared with the 1921 total of $29,029,673, show a decline in value of $4,877,106. This would seem to indicate a rather discouraging outlook in the paper export trade and cause one to assume that 1922 as a whole was a bad year, but upon analyzing the figures and comparing the totals month by month, the situation is decidedly encouraging and a healthy trend is noticeable.

In the first place, the first two months of 1921 may be looked upon as a continuation of the boom period of 1920. While it is true that, from a sales standpoint, this is not a correct statement, one must take into consideration the fact that with the beginning of 1921 all orders placed and contracts made for delivery in 1920 had not been filled because of the overcrowded conditions of the mills and the difficulties in transportation. On this basis, we must assume that a considerable portion of the shipments represented by the totals for January and February, 1921 ($7,205,645 and $5,043,965 respectively) would normbally have been included in the 1920 figures. Secondly, the figures represent shipments at prices in effect before the general decline, and are, therefore, not a fair basis for comparison. While the figures for March and April, 1921 ($2,537,547 and $2,027,604 respectively) might also represent a part of the 1920 business, they may be regarded as fairly normal for those two periods. For these four months of 1921 we have a total of $16,814,761 as compared with a total of $7,536,126 for the same period in 1922, or a loss of $9,278,635. For the balance of the year 1921 we have a total of $12,214,912 as compared with $16,616,441 for the balance of 1922, or a gain of $4,401,529. In other words, allowing for delayed shipments on orders placed in 1920 and decline in prices our figures for 1922 really represent an improvement over 1921.

In further analyzing the monthly figures we find that the decline in exports from the high figures of 1920 reached the low level in July, 1921, when exports amounted to $1,335,640. Since that time there has been a gradual increase reaching a total of $2,270,196 in December, 1922, the highest monthly total since March, 1921. This would indicate the probability of a continued increase.

A comparison with previous years is also of interest. We are not taking into consideration the years 1914 to 1920, inclusive, for the reason that these were abnormal, both from the standpoint of tonnage and value. The figures for the pre-war years as compared with the figures for 1922 are also out of proportion, because of the different price levels. Therefore, in order to get down to a fair basis of comparison we give in the first column of the following table the actual export figures, and, in the second column, for the years 1903, 1908 and 1913, values adjusted according to the approximate price levels. In adjusting the figures for these years we are assuming that the prices for 1922 were about double those of the pre-war years:

	Actual	*Adjusted*
1903	$7,180,014	$14,360,028
1908	8,064,706	16,129,412
1913	11,686,584	23,373,168
1922	24,152,567	24,152,567

Taking into consideration the fact that, during 1912, competition from European mills was keener than it ever has been and also that exchange rates in most markets were against us and in favor of our European competitors, the results for the year are decidedly satisfactory and show a very favorable trend in the paper export business.

While on this subject it might be well to call attention to the fact that our exports of paper are not commensurate with our production, which, in 1922, amounted to approximately 7,000,000 tons of all grades. Our exports for the same period amount to approximately two per cent of that production. In order to safeguard the industry and to insure full-time operation, the ratio should be much higher for, with the great increase in productive capacity brought about by the war and the new equipment now being installed and contemplated, it is doubtful whether the demand in the domestic market will be sufficient to absorb our production on a full-time basis.

FOR QUALITY PAPERS
USE

A-1 Bleached Sulphite Pulp

MANUFACTURED BY

Kellner-Partington Paper Pulp Co., Ltd.
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Uniform in Quality
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The Pulp and Paper Trading Company

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Sole Agents for United States fo

CANADIAN KRAFT, Ltd. **Three Rivers, CANADA**

Recent Incorporations

AETNA PAPER MILL SUPPLIES COMPANY, Brooklyn, New York. Capital, $10,000. Incorporators: F. Lepree, P. Brancalo. Attorneys, A. Brancato, 241 North Ninth street, Brooklyn.

AMERICO PRESS, Albany, New York. Make paper boxes. Capital, $25,000. Incorporators: G. G. and J. M. Nash, R. H. Parmelee. Attorney, F. S. Harris, Albany.

CAPITAL INCREASE

CHAMBERS PAPER STOCK COMPANY, Brooklyn, New York. Capital, $2,000 to $10,000.

Southern Paper Co. to Enlarge Plant

[FROM OUR REGULAR CORRESPONDENT]

MOBILE, Ala., February 19, 1923.—A contract for enlargement of the plant of the Southern Paper Company at Kreole, Miss., near to more than double its present capacity, has been awarded to George J. Glover, of New Orleans, according to announcement made by E. H. Mayo, general manager of the plant. Work will be started in ten days, and by the end of the present year the new unit will be in operation. The entire cost of the new buildings and new paper-making machinery will be about $1,500,000. The plans and specifications were drawn by George F. Hardy, consulting engineer, of New York.

Mr. Mayo, general manager of the company, has been in New York and other eastern cities for the past three weeks and placed orders for the pulp- and paper-making machinery, which will be ready for shipment in about three months. One of the features with which the new unit will be equipped will be a machine, the largest of the type, that will make paper 168 inches wide. This machine alone will cost $240,000, and with its electric drives will have a shipping weight of 650 tons. The two units for the recovery room, costing $17,000, will weigh 100 tons, and the boilers, also weighing 100 tons, will cost $50,000. The above machinery and a vast amount of other material will be manufactured in the United States. During a recent visit to England, Mr. Mayo placed orders for turbines and generators, which are being manufactured there.

The factory, which is one of the pioneer pine kraft mills of the South, was established in 1913. At first the company found it hard going, but gradually and by careful management all difficulties were surmounted. Now it is one of the biggest industries of the kind in the country.

One of the secrets of its success is that the management realized early in its operation that trained home labor was one of the essential things necessary to the plant. At that time the only home labor available in this section was that employed in sawmills. The mill operated for a time with labor brought here from other sections. Then the company turned to home labor. Men who were unaccustomed to any other work than sawmills were given jobs. Some indicated that they were willing to learn, while others did not. By a careful process of selection and weeding out the management got men who were anxious to become papermakers.

In fact, the management and the crew have done things that have caused other paper mills to marvel. The plant was built for a capacity of thirty tons of finished kraft paper a day. The manager and his operatives have increased this output to forty-five tons a day. Even with this increase, however, the mill cannot fill the demand for its product, and to meet this situation the enlargement was decided upon.

The company now employs 275 men in the plant, and about 75 more are employed in the woods and in the assembling of raw materials. When the new unit is completed the number of employees will be doubled. Most of them live in cottages surrounding the mill, forming one of the biggest industrial communities in the state.

Officers of the Southern Paper Company are: J. L. Dantzler, president; Arthur Shirley Benn, first vice-president; W. F. Hofstra, second vice-president; A. F. Dantzler, treasurer; E. H. Mayo, general manager; H. B. Everitt, Jr., secretary; H. A. Hughes, assistant secretary, and Sidney Allen, London secretary.

J. L. Dantzler, president, is well known in the lumber business, being connected with the L. N. Dantzler Lumber Company, of Moss Point. E. H. Mayo has spent the greater part of his life in paper mills, and it has been largely through his technical knowledge and training that the company has been so successful. H. B. Everitt, Jr., secretary, is a native of Pascagoula, and is the youngest officer of the company.

Pine timber is used exclusively by the mill in making paper. The wood is purchased by the cord from land owners in the county, and many cut-over tracts, reforesting themselves, are furnishing future raw material.

Products of the mill are marketed all over the world, or wherever kraft paper is used. After being made and wrapped at the mill at Moss Point, the labels of many wholesale paper houses, with different brand names, are attached.

Reforestation Conference at Albany

WATERTOWN, N. Y., February 26, 1923.—E. S. Cullings, secretary of The Board of the Black River Regulating District, returned Thursday from a Reforestation Conference held in Albany, Tuesday. It was the second conference of the kind called and presided over by Alexander MacDonald, conservation commissioner.

The Senator Rabenold bill which amends the general tax law in such a way as to exclude natural or planted forests from the general head of real estate, was strongly favored by the members present. It is felt that the passage of the bill means a great stimulus to reforestation in this section where it is already progressing and will mean much to the state at large. The bill would place the tree crop on the same basis as farm crops, so far as taxation is concerned.

John N. Carlisle is a member of the industrial committee of the reforestation organization and E. S. Cullings is a member of the forestry development committee.

Michigan Cost Men Meet at Kalamazoo

KALAMAZOO, Mich., February 23, 1923.—The Kalamazoo Valley Local Division of the Cost Association of the Paper Industry held its third annual convention here today.

The speakers included G. K. Ferguson of the Watervliet Paper Company, Watervliet, Miss., on "How to Establish Machine Hour Rate"; Elbert Milham, head of the Technical Department of the Bryant Paper Company, Kalamazoo, on "Technical Control in Relation to Costs"; George T. Jubb of the Kalamazoo Paper Company, Kalamazoo, on "How Charge to Repairs, Replacement and Equipment Affect Costs"; F. E. Seidman, of Seidman & Seidman, Grand Rapids, Mich., on "Income Tax Factors That Affect Costs."

The Kalamazoo College Glee Club furnished music during the dinner.

National Paper Products Co. Leases Mill

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., February 26, 1923.—The National Paper Products Company of Carthage has leased the C. R. mill of the International Paper Company, located at Glen Park, according to a report in circulation here. Efforts to verify the report failed, however, when an official of the company was asked about it. That negotiations had been under way was not denied but it would not be said that the deal had been closed.

The Carthage concern manufactures folded specialties, towels and toilet paper and commercial toilet paper. It is understood that the C. R. mill would be converted into a tissue mill in event it were taken over by the National Paper Products Company. This would greatly increase the output of the concern.

The Beloit Two Drum Winder

Has made a place by itself on its own merits.

An astonishing list of repeat orders is its best advertisement.

BELOIT IRON WORKS
BELOIT, WISCONSIN, U. S. A.

Editorial

Vol. LXXVI New York, March 1, 1923 No. 9

HENRY J. BERGER, Editor

THE EIBEL PATENT DECISION

The decision of the Supreme Court of the United States upholding the patent of the Eibel Process Company in the case of that company against the Minnesota and Ontario Paper Company, which has for its object the construction and arrangement of the Fourdrinier whereby by pitching the wire higher it may be run at a very much higher speed than previous to the patent and produce a more uniform sheet of paper, and which was briefly reported in the PAPER TRADE JOURNAL last week, conclusively and finally settles a question that has been of great interest in the paper industry for a considerable number of years.

The patent which was issued to William Eibel, February 26, 1907, was held void by the District Court for the Western District of New York in the Case of *Eibel Process Company* vs. *Remington-Martin Company*, in 1914. On appeal, the Circuit Court of Appeals for the Second Circuit reversed the decree of dismissal in the District Court, sustained the patent and found infringement of Claims Nos. 1, 2 and 3, but did not pass upon Claims Nos. 7, 8 and 12—in 1916. The bill in the present case was filed in the District Court for Maine, January 1, 1917. That court in 1920 held the patent valid and entered a decree of injunction and for damages. On appeal, the Circuit Court of Appeals for the First Circuit reversed the decree and directed the dismissal of the bill, in 1921. Because of the conflict in the two circuits, certiorari was granted to review the latter decree by the Supreme Court.

Because of the conflicting decisions of the lower courts and because of the fact that the patent was held invalid in England, this review of the case by the Supreme Court was awaited with decided interest by many in the paper industry.

Chief Justice Taft, who writes the opinion for the court, reviews the controversy in a most interesting manner.

Regarding the question as to whether this was a real discovery of merit the Chief Justice says: "Before August, 1906, Eibel raised the pitch of the wire from two or three inches to twelve inches and greatly increased the speed with a satisfactory product and in that month he applied for a patent. The defendant's witnesses without exception refer to that disclosure as something that surprised and startled the paper-making trade. It spread, to use the expression of one witness, like wild fire. There were those who hesitated to take the venturesome step to give such an unheard-of pitch to the wire and waited until others assumed the risk, but the evidence is overwhelming that within a short interval of a year or two all of the fast machines were run with wires at a pitch of twelve inches and that this pitch has been increased to fifteen and eighteen and even twenty-four inches, that the speed of the machines with satisfactory product has increased to six hundred, six hundred and fifty, and even seven hundred feet, with plans now even for a thousand feet and that the makers of two-thirds of the print paper of the country are licensees of Eibel.

"Defendant attempts to break the effect of this evidence by showing that five of the largest paper manufacturers who are licensees of Eibel are also shareholders in the Eibel Process Company, the plaintiff, and that they make 2,200 tons of the 5,000 tons of paper made daily in the United States. This circumstance seems to have had influence with the Circuit Court of Appeals. There are, however, ten other paper-making companies, not shareholders, who are licensees and use the Eibel pitch, and whose aggregate production is 1,200 tons a day; and what is equally significant, thirteen other companies have contributed to a fund to help in resisting the establishment of the right of Eibel to claim a royalty for the use of this high or substantial pitch of the wire in the making of paper. Presumably they too find it wise to use the Eibel pitch. The paper makers in this country who do not use the Eibel pitch, therefore, are few. It can hardly be that dividends on the shares of stock in the Eibel company held by the five large companies would furnish motive enough for them to continue to be licensees and to use something that was not of great advantage to them in their chief business of making of paper; and certainly no such motive would explain the action of the licensees who are not stockholders or that of the infringers, in continuing to use the Eibel pitch. It should be said that one of the large manufacturers of paper-making machinery called by the defendant said that since 1907 he had not installed a single machine without the Eibel pitch.

"The fact that the Eibel pitch has thus been generally adopted in the paper making business and that the daily product in paper making has thus been increased at least twenty per cent over that which had been achieved before Eibel is very weighty evidence to sustain the presumption from his patent that what he discovered and invented was new and useful."

In considering the evidence of the prior art and the contention of the defendant, and the conclusion of the court below, that the step taken by Eibel, so far as he took one, was a mere obvious application of fully developed devices in the prior art Mr. Taft says:

"The Eibel invention is distinguished from the prior art in two ways, first in that the pitch of the wire was for a different purpose to be accomplished, not at the Dandy roll some twenty or more feet from the breast roll, but at a point only nine or ten feet from there, and, second, by the fact that to achieve his purpose a high or substantial pitch must be given to the wire, while only a small or trivial pitch was needed for the drainage of the prior art.

"Indeed, when we consider the indisputable fact that Eibel's successful experiment at Rhinelander and his application for a patent surprised the whole paper trade, and that for a short time many held back from risking so radical a change and then all adopted it, oral evidence that some persons had discovered the source of trouble and the means of remedying it some years before Eibel is incredible.

"His was not a pioneer patent, creating a new art; but a patent which is only an improvement on an old machine may be very meritorious and entitled to liberal treatment. Indeed, when one notes the crude working of machines of famous pioneer inventions and discoveries, and compares them with the modern machines and processes exemplifying the principle of the pioneer discovery, one hesitates in the division of credit between the original inventor

and the improvers; and certainly finds no reason to withhold from the really meritorious improver, the application of the rule *'ut res magis valeat quam pereat,'* which has been sustained in so many cases in this court."

"It is next objected," writes Mr. Taft, "that the alleged invention covers only a matter of degree in pitch which cannot be the subject of a patent. The prior art showed the application of gravity by use of the pitch of the wire to the improvement of the Fourdrinier machine and Eibel, it is said, merely increased degree of pitch and gravity for the same general purpose. We think this attack upon the patent cannot prevail. Eibel's high or substantial pitch was directed toward a wholly different object from that of the prior art."

Coming to the final matter of infringement, Mr. Taft says: "If the Eibel patent is to be constructed as we have construed it, there can be no doubt that the defendant uses the Eibel invention."

The matter of the validity of the Eibel patent is thus ended and paper manufacturers in this country, regardless of their personal opinions, will be obliged to follow the mandate of the court.

EMPLOYMENT IN THE PAPER INDUSTRY

The Bureau of Labor Statistics of the Department of Labor at Washington, D. C., has just issued its employment figures for January, which, although slightly less than for the preceding month, continue to show a remarkably sound condition of the industry.

The bureau received replies from 130 paper and pulp mills showing their employment in December, 1922, to have been 38,840, decreasing slightly in January of this year to 38,497, a decrease of .9 per cent. The payrolls in these establishments remained practically the same, the payrolls in December being $970,741, decreasing very slightly to $970,289 in January.

The bureau also compares the employment in January of last year with January of this year. Replies were received from 45 paper and pulp mills showing their employment in January, 1922, to have been 19,496, increasing slightly in January of this year to 20,830, an increase of 6.8 per cent. The payrolls also increased from $468,843 in January, 1922, to $512,117 in January of this year, which was an increase of 9.2 per cent.

The bureau also received replies from 112 paper box factories showing their employment in December of last year to have 13,309, decreasing to 12,798 in January, which was a decrease of 3.8 per cent. The payrolls in these factories decreased from $276,641 in December to $254,843 in January which was a decrease of 7.9 per cent.

Miami Valley Superintendents Meet

DAYTON, Ohio, February 26, 1923.—"Waste in the Paper Industry" was the subject of an address by George Bearce, an official of the News Print Service Bureau of New York, at the monthly meeting of the Miami Valley Division of the American Pulp and Paper Mill Superintendents' Association at the Hotel Manchester, Middletown, Saturday night.

Mr. Bearce proved an interesting and entertaining speaker. He pointed out the many leaks in the business and recommended remedial measures.

The attendance was large and a profitable session of the papermakers was reported.

Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., February 28, 1923.—The purchasing officer of the Government Printing Office has received the following bids:

1,000,000 pounds 22½ x 28—104 Cream bristol board, in 44½ inch rolls: The Champion Coated Paper Company, $.0824 per pound; The Whitaker Paper Company, $.0842; American Writing Paper Company, $.08235; The Champion Fibre Company, $.0834.

15 reams 36 x 36—Special drab cloth lined cover paper: Nashua Gummed and Coated Paper Company, at $210 per M sheets; C. J. Vanella & Co., $250; The Broderick Paper Company, $149.30; R. P. Andrews Paper Company, $206; The Whitaker Paper Company, $217; Mathers-Lamm Paper Company, $223.

34,800 pounds 38 x 48—58 Opaque printing paper, HMF: Allied Paper Mills, at $.08921 per pound; Bryant Paper Company, $.112; Dobler & Mudge, $.09; R. P. Andrews Paper Company, $.0885; Old Dominion Paper Company, $.0919; Reese & Reese, $.0872; Kalamazoo Paper Company, $.097; Whiting-Patterson Company, Inc., $.1125.

4,000 pounds U.S.M.O. blue and white writing paper: Whiting-Patterson Company, at $.125 per pound.

1,000,000 pounds 22½ x 28½—104 Cream bristol board, in 44½ inch rolls: The Whitaker Paper Company, $.0835 per pound; The Champion Coated Paper Company, $.0809; American Writing Paper Company, $.08235; The Champion Fibre Company, $.0843; Old Dominion Paper Company, $.08429.

500,000 cartons, 5½ x 5⅜ x 3¼ inch inside dimensions: National Carton Company, at $6.35 per M; Climax Manufacturing Company, $6.05; Consolidated Paper Company, $6.11; Ohio Boxboard Company, $6.30; National Folding Box Company, $6.37; A. Geo. Schulz Company, $6.50.

The purchasing officer of the Government Printing Office will open bids on March 5 for the following:

1,810 pounds (10 reams) 22½ x 28½—181 White index bristol board.

36,000 pounds (300 reams) 22½ x 28½—120 No. 1 White Bristol Board.

500 pounds (1,200 sheets) 26 x 38—No. 120, news board.

20,000 pounds (4,000 sheets) 34 x 44—No. 10, trunk board.

50,000 pounds (50,000 sheets) 26 x 38—No. 50 chip board.

20,000 pounds (12,000 sheets) 25 x 30—No. 30 binders board.

40,000 pounds (16,000 sheets) 25 x 30—No. 20 binders board.

The Champion Coated Paper Company has been awarded the contract for furnishing the Government Printing Office with 1,000,000 pounds of U. S. Postal Card Cream Bristol Board in 44½ inch rolls at $.0809 per pound, bids for which were opened on February 19.

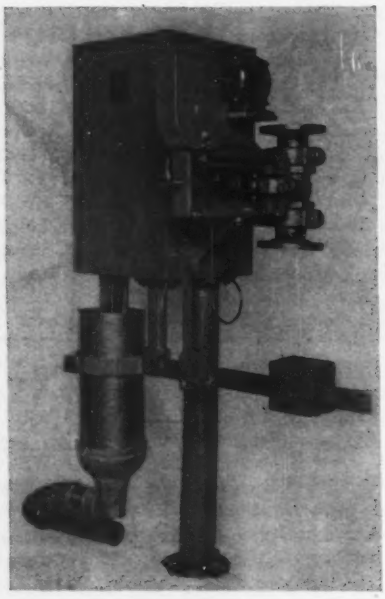
The R. P. Andrews Paper Company will furnish 10,000 pounds of calendared tag board in 24 inch rolls at $.0888 per pound, bids for which were opened on February 12.

The Broderick Paper Company will furnish 14,400 pounds (400 reams) of 21 x 32—36 pounds No. 20 high M.F. yellow writing paper at $.096 per pound, bids for which were opened on February 7.

The Whiting-Patterson Company has been awarded the contract for furnishing the Government Printing Office with 4,000 pounds of No. 18 U. S. M. O. machine dried writing paper in 8½ inch rolls at $.125 per pound, bids for which were opened on February 19.

Opalescent Paper Co. Formed in Providence

PROVIDENCE, R. I., February 26, 1923.—The Opalescent Paper Company, to be located in Providence, for the purpose of dealing in paper of all descriptions, has obtained a charter from Deputy Secretary of State Sprague. The authorized capital is $150,000. The incorporators are Harold C. Pearl, William H. Hamlyn and William H. Hamlyn, Jr.



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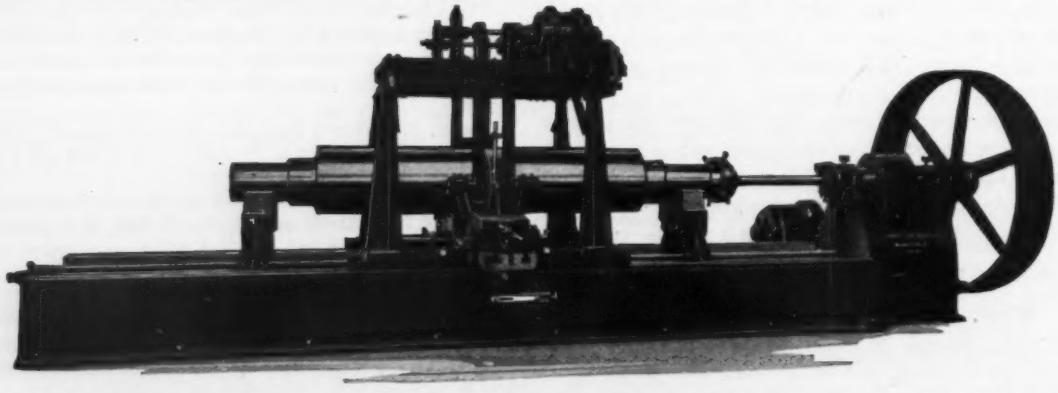

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Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G. MacNAUGHTON, Secretary

POWER AS A BY-PRODUCT

By Warren B. Lewis, Consulting Engineer, Providence, R. I.

A deplorable fallacy that has long been accepted as gospel in the paper industry, might be stated in the form of a theorem in geometry, as follows:

"The steam consumption per horse-power hour of an engine driving a paper machine is of relatively small importance inasmuch as the exhaust steam from the engine is used entirely in the driers."

On this false theory, paper-making plants are generously equipped with engines of a most inefficient type.

In the days when variable speed could only be obtained through the use of a throttling steam engine, this theory might well have been tacked on as a sort of apology if one were needed. A survey of a number of paper mills will prove that the cost of power is excessive, due to the belief that the theory is a good one.

If a paper mill requires no mechanical power other than that associated with machines using steam for drying and heating purposes, then there might be some excuse for the continued use of inefficient engines; but as no such mill exists the only conclusion that can be drawn is that owners and operators but imperfectly understand the extraordinary expense which they bear by reason of inefficient mechanical drives.

The Error Illustrated

An illustration will perhaps most clearly point out the error: Assume a paper mill with one paper-making machine, requiring 100 horse-power to drive and 5,000 pounds of steam per hour condensed in the driers. The engine driving this machine exhausts 4,000 pounds of steam per hour, which is insufficient for the driers; and 1,000 pounds of steam additional are taken from a live steam line through a reducing pressure valve to make up the deficiency. Considered only as a unit, it would appear that the efficiency of the engine was immaterial.

In this same mill, however, there will be many other machines requiring mechanical power; and at some place there will be a central power plant in which is an engine, perhaps running non-condensing and exhausting to the atmosphere; or, more usually, running condensing. In either case the heat of the steam which passes through this engine is entirely lost, except for about 5 per cent, which is converted into mechanical work.

This illustration may be expanded to cover any mill in which engines exhausting through driers represent but a part of the mechanical power.

In the illustration referred to, we will assume that the machines requiring mechanical power, but no steam for heating, use 200 horse-power. It is evident that 4,000 pounds of steam have been generated to drive the paper machine, 1,000 pounds to add to the exhaust for the driers, and from 5,000 to 6,000 pounds to operate the 200 horse-power engine, a total of from 10,000 to 11,000 pounds. Suppose, now, that the engine which drives the paper machine, instead of developing 100 horse-power when passing 4,000 pounds of steam, had developed 160 horse-power with the same 4,000 pounds of steam. There would have been available 60 horse-power for driving other machines, which would have made it unnecessary to develop 200 horse-power, but only 140 horse-power; and still the 1,000 pounds of steam taken from the boilers to make up the deficiency for the driers has developed no mechanical power.

If, now, this same 5,000 pounds are passed through an efficient type of engine, they will produce 200 horse-power of work, 100 of which will drive the paper machine and 100 will become available for other machines, making it necessary to develop but 100 horse-power for these additional machines, or one-half as much as originally.

In other words, the problem was attacked wrong-end to. The important thing seemed to be to furnish sufficient mechanical power to drive the paper machines and whatever steam was available could be used in the driers. The right way to have attacked the problem would have been to have determined the amount of steam required by the driers and to have then used an engine which would have developed the greatest amount of mechanical power with that amount of steam.

Inefficient Engines in Paper Mills

In many of the large paper mills, there are a considerable number of inefficient engines operated on this fallacious theory; while, at the same time, there will be other engines or one large unit developing mechanical power and wasting ninety-five per cent of its heat to a condenser. The ease and facility with which mechanical power developed by an engine can be transmitted electrically to any kind of machine, whether of constant-speed characteristics or variable-speed characteristics, makes it possible to group mechanical power in the fewest number of units of the maximum logical efficiency. Use such steam as is required at low pressure for drying and heating purposes and reduce that amount of power which is represented by a waste of heat to condensers to a minimum. There can be no justification for the use of inefficient types of steam engines in any paper mill where the total mechanical power required is in excess of the power possible to realize from steam used in driers, boiling operations, etc. So true is this that operations which are carried on through the use of steam at boiler pressure should, in so far as

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is possible, be done with steam at low pressure obtained from the exhaust of an engine. Frequently a hot-water storage will not only utilize exhaust steam to good advantage, but will save a great deal of time in boiling operations. Bleaching can frequently be started with hot water, with a great saving in time and steam. The heating of buildings should be done with low-pressure steam. The ventilation of machine rooms can be most successfully done with the circulation of air heated to moderate temperatures with low-pressure steam in pipe coils.

Another Illustration

Let me quote, as an instance, a paper mill in which a steam turbine delivering 600 kilowatts and taking 15,000 pounds of steam from the boilers, furnished the mechanical power. Ten thousand pounds additional steam were used for drying, heating, boiling and similar operations. Changes were made so that that part of the steam which was used for drying and heating purposes was passed through the cylinder of a simple Corliss non-condensing engine which exhausted to a low-pressure main, and hence to driers and heating coils. The net result was the production of 200 kilowatts of energy through the use of this simple engine acting as a reducing pressure valve, without the addition of a pound of steam on the boiler plant; and the load on the turbine was reduced from 600 to 400 kilowatts, with an attendant saving of 5,000 pounds of steam per hour. The load on the simple engine is automatically regulated to provide just exactly the amount of low-pressure steam which can be used most economically. At a cost of 80 cents per thousand pounds for steam, the saving is $4 per hour, or $96 for each twenty-four hours that the mill runs. Here is a saving of more than $25,000 per year in fuel alone.

Small high-speed engines will use as high as 60 pounds of steam per indicated horse-power per hour. Medium-speed engines of 100 horse-power and of the throttling type, will use 40 pounds of steam per indicated horse-power per hour. A simple non-condensing Corliss engine, operating with fairly high steam pressure and exhausting against a back pressure of five pounds gage, will use 25 pounds of steam per indicated horse-power per hour.

Should Be at Least Two Main Power Units

As it is not probable that any paper mill can produce all of the mechanical power required from the steam which ultimately appears as low-pressure steam, there should be at least two main power units, one the most economical type of condensing unit, and the other the most economical type of non-condensing unit, the latter to develop as much power as the uses of low-pressure steam will permit.

When one realizes that power required to run machines, pumps for pumping water, air compressors, lighting, ventilation and all other similar facilities are reflected in the fuel bill, the concentration of power in the fewest number of units so divided as to produce low-pressure steam at the least cost, will pay a very satisfactory return upon the money required, not only to install such power units but to pay for the entire cost of the distribution of that power.

Reducing Total Amount of Steam

Frequently much thought will be expended on the economical operation of a boiler plant; but the saving to be made in the economical production of mechanical power and its distribution, together with the distribution of low-pressure steam, is very much greater than an increase of five or even ten per cent in the boiler plant. Naturally, both items should be given the attention which they deserve; but thought and energy should be concentrated, first, on reducing the total amount of steam that the plant requires to a minimum, and then on producing that steam at the maximum efficiency.

There are comparatively few operations in a paper mill in which steam at boiler pressure is actually required. In the majority of cases, low-pressure steam can be used just as effectually, although it may require alterations in piping systems and sometimes in machines themselves.

The wages paid in the production and distribution of steam and power are a very small proportion of the total cost; and in very many cases the avoidable losses are several times as great as the entire labor cost.

Power Distribution an Exact Science

Production and distribution of power is a fairly exact science, and is subject to accurate analysis. Not only can the cost of power, steam, light, heat, water, etc., be made a practicable minimum, but it is equally possible to maintain it at that minimum with very little added attention.

In the smaller plants, non-condensing engines of the Corliss type can be used to excellent advantage, and modern devices for extracting lubricating oils from the steam makes it possible to use the condensate in the boilers without danger. In the larger sizes, non-condensing turbines will produce power at reasonable rates of steam consumption, and the condensate is practically distilled water, which is particularly beneficial in boilers.

One thousand pounds of steam at 100 pounds' gage pressure contain 1,188,800 B. t. u. The water of condensation from driers, heating coils, etc., can be returned to the boilers at a temperature of 160 degrees Fahrenheit, containing 128,000 B. t. u. There will thus apparently disappear in each 1,000 pounds of steam, from the time that it leaves the boilers until it returns, 1,060,800 B. t. u., and from this may be derived 40 indicated horse-power of mechanical work and practically 90 per cent as much heat as would have been realized from the use of this steam at boiler pressure in the various heating systems.

In some plants cross-compound engines can be used to excellent advantage, extracting steam from the receiver between the high- and low-pressure cylinders, allowing the low-pressure cylinder to run condensing and to develop such mechanical power as must be developed in a condensing engine.

In those plants where cross-compound condensing engines are used to produce power solely, the alteration can sometimes be made by connecting the low-pressure piping system to the receiver, and extracting such steam as can be used economically at that pressure. If the proportions of the engine are favorable, practically no change is necessary in the power equipment.

Each Case Must Be Analyzed

As in most mechanical problems, each case must be analyzed and decided upon its own merits; but in every case, the principle holds true. In the woolen industry this has been well understood; and in many of the smaller plants all of the mechanical power required to drive the machinery is a by-product in the process of reducing steam from high to low pressure.

Waste in the Industry

At the Eighth Annual Convention of the Technical Association of the Pulp and Paper Industry to be held in New York, April 9 to 13, one of the general sessions is to be devoted to this important subject and the Chairman of the Committee, Robert B. Wolf, and the Vice-Chairman, Geo. D. Bearce, are working hard with members of their committee to have some valuable tests completed in time for presentation of the results in their report.

One of the subjects that will be dealt with is "Fiber Loss in the Mill Effluent and the Means for Prevention and Recovery." It is expected that the committee will be in a position to make positive recommendations as to methods of measurement and standards of practices.

Another subject is the "Utilization of Barking Drum Refuse for Fuel." The results of reduction of moisture by pressing will be given and it is also expected that evaporative tests of material will be available in different types of furnaces.

CHEMISTRY OF THE SULPHITE PROCESS

III. Reactions of the Calcium Base

By R. N. Miller[1] and W. H. Swanson[2]

Chemistry of the Sulphite Process III are contributions of Forest Products Laboratory to the Cellulose Committee of the Technical Association to be presented before the annual meeting of the Association April 9-13, 1923.

Chemistry of the Sulphite Process I. *Procedure of investigation and methods of analysis by R. N. Miller and W. H. Swanson was presented before the annual meeting April* 10-14, 1922 *and published in Technical Association Papers Series V* (1922).

Chemistry of the Sulphite Process II. Chemical properties of pulps prepared by indirect cooking, by N. W. Bray and T. M. Andrews was presented before the Fall meeting, October 9, 1922, *and published in* Paper Trade Journal *January* 18, 1923.

A previous paper[3] reported an observation by the authors that a part of the calcium base used in cooking sulphite wood pulp was somehow localized so that samples of liquor drawn from the digester, upon analysis did not account for all the base added at the start of the cook. In this paper are recorded some studies of the conditions influencing the disappearance of the base, together with some observations on the effect of these variable conditions on the pulp produced.

The cooks in this series were carried out in the small digester at the Forest Products Laboratory. This digester has a capacity of fifty pounds of pulp. It is equipped so that it can be heated by direct or indirect steam. The necessary condensers and receivers are provided so that all material leaving the digester during a cook either as gas or liquid relief can be measured and sampled for analysis. The samples drawn from the digester were drawn through a cooler, measured, and analyzed.

The analytical data obtained include the total amount of base determinable in the liquor and the base present as bisulphite. The total calcium was determined by digesting the liquor with nitric and sulphuric acids to destroy organic matter, precipitating the calcium as calcium oxalate, and titrating the oxalate in the usual way with standard potassium permanganate. The inorganic combined calcium was calculated from the combined sulphur dioxide determined by the method of A. Sander[4] as used in this Laboratory.

It was found in the course of work before this study was started that the amount of moisture in the wood had an effect upon the rate of disappearance of the base. In the series of cooks considered in this article the wood cooked was of different moisture content in each cook. The temperature rise and pressure were the same in five of the seven cooks made. The other two were alike but different from the five.

The acid used was prepared by passing sulphur dioxide gas from cylinders of pure compressed gas into a suspension of calcium hydrate (98 per cent calcium hydrate). The concentration was adjusted to meet two conditions; to give a uniform concentration after dilution by the moisture in the wood or of standard composition to observe the effect of such dilution. It should be noted that in cook 640-I the acid was considerably weakened by dilution, but that the reduced relief necessary to maintain pressure soon compensated for the dilution and the acid was as strong as that in cooks 638-I, 645-I, 646-I, and 647-I before the tenth hour was reached.

The wood used in these cooks was white spruce from Northern Wisconsin. The variation in moisture content was from kiln-dried chips containing no moisture removable by drying for twenty-four hours at 190 degrees Fahrenheit, to wood that had been saturated with water by boiling and contained 63.9 per cent moisture.

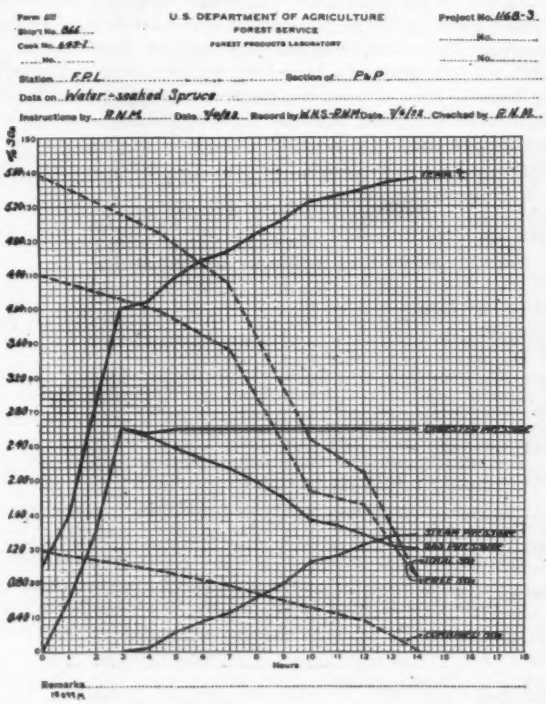

Figure 1 shows the temperature and pressures maintained during the cooks from which the data were obtained except cooks 643-I and 644-I which were made on a slower temperature rise.

Table 1 shows the per cent of calcium oxide in the liquor corrected to the volume and specific gravity of the liquor at the start of the cook, and converted for comparison to the per cent the same amount would give in one hundred gallons of acid. Expressing it in this way eliminates the variation due to volume changes during the cook when it is desired to compare quantities of chemical. Cor-

Table 1—Percentage of Calcium Oxide Determined in Liquor Corrected for Liquid Relief

Cook No.	Basis	Raw acid	Per cent calcium oxide Cooking hours 4½	7	10	12	12½	14	14¾	15	15¼	15¾
638-I	100 gal.	0.54	0.53	0.44	0.39	0.35	0.32	...	...	...	...	...
	True vol.	0.94	0.91	0.76	0.67	0.61	0.55	...	...	...	...	...
640-I	100 gal.	0.58	0.53	...	0.45	0.44	...	0.43	0.41	...	...	...
	True vol.	0.85	0.78	...	0.60	0.65	...	0.63	0.60	...	...	...
645-I	100 gal.	0.59	0.52	0.47	0.41	0.38	...	0.28	...	...	...	...
	True vol.	0.94	0.83	0.75	0.65	0.61	...	0.45	...	...	...	...
646-I	100 gal.	0.64	0.53	0.50	0.44	0.40	...	0.28	...	...	...	...
	True vol.	1.06	0.88	0.82	0.73	0.67	...	0.47	...	...	...	...
647-I	100 gal.	0.70	0.65	0.60	0.53	0.46	...	0.45	...	...	...	0.30
	True vol.	1.06	0.98	0.91	0.80	69.5	...	68.5	...	...	...	0.45
643-I	100 gal.	0.65	0.58	0.54	0.50	0.48	...	0.46	...	0.39	0.36	...
	True vol.	1.02	0.92	0.86	0.79	0.76	...	0.72	...	0.62	0.57	...
644-I	100 gal.	0.67	0.64	0.59	0.50	0.49	...	0.46	...	0.43	...	...
	True vol.	1.02	0.97	0.90	0.76	0.74	...	0.70	...	0.66	...	...

[1]Chemist in Forest Products, Forest Products Laboratory, Forest Service, Madison, Wisconsin.

[2]Assistant Wood Technologist, Forest Products Laboratory, Forest Service, Madison, Wisconsin.

[3]Miller & Swanson, Paper Trade Journal, April 13, 1922—see also Tech. Assn. Papers, Series V (1922), pp. 69-74.

[4]Miller and Swanson, Paper Trade Journal, April 13, 1922.

recton has also been made for the calcium oxide removed in the relief and samples drawn. The percentages given are for total calcium oxide.

The inorganic combined calcium oxide, values for which are shown in Table 2 is obtained by calculation from the combined sulphur dioxide determined in the liquor by the method of A. Sander as used in this Laboratory. The same kind of corrections have been applied to these values as were applied to those for total calcium oxide.

The values in the table showing the calcium oxide unaccounted for (Table 3) were obtained by subtracting the total calcium oxide determined in the liquor from that present at the start of the cook. Table 4 gives the values for calcium oxide combined with organic material. They were obtained by subtracting the inorganic combined calcium oxide from the total calcium oxide determined in the liquor. Table 5 gives the condensed cooking data for all the cooks and the partial chemical analysis and Table 6 gives the physical properties of the pulps.[5]

[5]Chemical analysis by M. W. Bray and T. M. Andrews; physical tests by L. J. Padyham of this Laboratory.

TABLE 2—INORGANIC CALCIUM OXIDE CALCULATED FROM COMBINED SULPHUR DIOXIDE

Cook No.	Basis	Per cent inorganic calcium oxide Cooking hours: Raw acid	4½	7	10	12	12½	14	14¾	15	15¼	15¾
638-I	100 gal.	0.55	0.49	0.28	0.19	0.06	0.03	...	...	...	...	...
	True vol.	0.95	0.85	0.48	0.33	0.16	0.05	...	...	...	...	...
640-I	100 gal.	0.52	0.42	...	0.23	0.16	...	0.07	0.06	...	...	...
	True vol.	0.77	0.62	...	0.34	0.23	...	0.10	0.08	...	...	...
645-I	100 gal.	0.65	0.52	0.41	0.32	0.17	...	0.03	...	...	...	...
	True vol.	1.04	0.83	0.66	0.51*	0.27	...	0.04	...	...	...	...
646-I	100 gal.	0.62	0.54	0.40	0.27	0.18	...	0.03	...	...	...	...
	True vol.	1.03	0.89	0.66	0.45	0.29	...	0.04	...	...	...	...
647-I	100 gal.	0.65	0.62	0.49	0.40	0.28	...	0.20	...	...	...	0.01
	True vol.	0.99	0.94	0.75	0.61	0.43	...	0.30	...	...	...	0.02
643-I	100 gal.	0.64	0.52	0.44	0.32	0.26	...	0.19	...	0.07	0.03	...
	True vol.	1.01	0.82	0.69	0.51	0.41	...	0.30	...	0.11	0.05	...
644-I	100 gal.	0.66	0.58	0.49	0.37	0.33	...	0.24	...	0.18	...	...
	True vol.	1.00	0.88	0.74	0.57	0.50	...	0.37	...	0.28	...	...

TABLE 3—MISSING CALCIUM OXIDE OBTAINED BY SUBTRACTING CALCIUM OXIDE DETERMINED IN LIQUOR FROM THE ORIGINAL CALCIUM OXIDE CONTENT OF THE ACID

Cook No.	Basis	Per cent calcium oxide Cooking hours: Raw acid	4½	7	10	12	12½	14	14¾	15	15¼	15¾
			18.5*	18.5*	27.8*	35.2*	40.7*	...	...	...	...	...
638-I	100 gal.	0.54	0.10	0.10	0.15	0.19	0.22	...	...	...	...	...
	True vol.	0.94	0.03	0.18	0.27	0.33	0.39	...	...	...	...	...
			8.6*	...	22.4*	24.2*	...	25.9*	29.4*	...	...	...
640-I	100 gal.	0.58	0.05	...	0.13	0.14	...	0.15	0.17	...	...	...
	True vol.	0.85	0.07	...	0.19	0.20	...	0.23	0.26	...	...	...
				11.9*	20.4*	30.5*	35.6*	...	35.6*	...	...	...
645-I	100 gal.	0.59	0.07	0.12	0.18	0.21	...	0.21	...	...	...	...
	True vol.	0.94	0.11	0.19	0.29	0.33	...	0.49	...	...	...	...
			17.2*	21.9*	31.3*	37.5*	...	56.3*	...	...	...	...
646-I	100 gal.	0.64	0.11	0.14	0.20	0.24	...	0.36	...	...	...	...
	True vol.	1.06	0.18	0.24	0.33	0.39	...	0.59	...	...	...	...
			7.2*	14.3*	24.3*	34.3*	...	35.7*	...	...	...	57.2*
647-I	100 gal.	0.70	0.05	0.10	0.17	0.24	...	0.25	...	...	...	0.40
	True vol.	1.06	0.08	0.15	0.26	0.38	...	0.39	...	...	...	0.63
			10.8*	16.9*	23.1*	26.2*	...	29.2*	...	40.0*	44.6*	...
643-I	100 gal.	0.65	0.07	0.11	0.15	0.17	...	0.19	...	0.26	0.29	...
	True vol.	1.02	0.10	0.16	0.23	0.26	...	0.30	...	0.40	0.45	...
			4.5*	11.9*	25.4*	26.9*	...	31.3*	...	35.8*	...	...
644-I	100 gal.	0.67	0.03	0.08	0.17	0.18	...	0.21	...	0.24	...	...
	True vol.	1.02	0.05	0.12	0.26	0.28	...	0.32	...	0.36	...	...

*Per cent decrease.

Upon inspecting Table 1 it is noted at once that there is a decided decrease in the figures for total calcium oxide present, this decrease at the end of the cook amounting in some cases to over fifty per cent of the base originally present in the liquor. The amount of the decrease is shown in Table 3, as well as the per cent decrease. It is plain that the decrease is not uniform nor independent of the cooking conditions. Comparing cooks 638-I and 640-I a variation in both the rate and amount of decrease is noted though the amount of base present at the start does not differ greatly in the two cooks. There are, however, decided differences in other conditions in these two cooks. Cook 638-I was made on air dry chips, containing seventeen per cent moisture, while cook 640-I was made on wood that had been saturated with water by boiling. Also the acid concentration in cook 638-I was considerably higher than that in cook 640-I in the earlier stages in the cook. Table 5 shows this difference in moisture content and acid strength.

TABLE 4—ORGANIC CALCIUM OXIDE OBTAINED BY SUBTRACTING THE INORGANIC LIME FROM THE CALCIUM OXIDE DETERMINED IN THE LIQUOR

Cook No.	Basis	Per cent organic calcium oxide Cooking hours: Raw acid	4½	7	10	12	12½	14	14¾	15	15¼	15¾
638-I	100 gal.	...	0.04	0.16	0.20	0.29	0.29	...	...	...	...	...
	True vol.	...	0.06	0.28	0.34	0.51	0.50	...	...	...	...	...
640-I	100 gal.	...	0.11	...	0.22	0.28	...	0.36	0.35	...	...	...
	True vol.	...	0.16	...	0.32	0.42	...	0.53	0.52	...	...	...
645-I	100 gal.	...	...	0.06	0.09	0.21	...	0.25	...	...	...	...
	True vol.	...	...	0.09	0.14	0.34	...	0.41	...	...	...	...
646-I	100 gal.	...	...	0.10	0.17	0.22	...	0.25	...	...	...	...
	True vol.	...	...	0.16	0.28	0.38	...	0.43	...	...	...	...
647-I	100 gal.	...	0.03	0.11	0.13	0.18	...	0.25	...	...	...	0.29
	True vol.	...	0.04	0.16	0.19	0.27	...	0.38	...	...	...	0.43
643-I	100 gal.	...	0.06	0.10	0.18	0.22	...	0.27	...	0.32	0.33	...
	True vol.	...	0.10	0.17	0.28	0.35	...	0.42	...	0.51	0.52	...
644-I	100 gal.	...	0.06	0.10	0.13	0.16	...	0.22	...	0.25	...	...
	True vol.	...	0.09	0.16	0.19	0.24	...	0.33	...	0.38	...	...

The cooks were blown when the base present as bisulphite was nearly exhausted as shown in Table 2. This occurred in twelve and one-half hours in the case of cook 638-I and in fourteen and three-quarter hours in the case of cook 640-I. From these two cooks it appears that the rate of disappearance of the base is greater in the case of the dryer wood as is also the rate of exhaustion of the bi-sulphite. The rate of combination of the base with the organic matter of the wood does not show great variation as seen in the Table 4.

In cooks 645-I, 646-I and 647-I the wood was water soaked cold, kiln dried, and saturated by boiling in water, respectively. These cooks show a variation in rate of disappearance of lime of the same order as cooks 638-I and 640-I, viz., the rate of disappearance is greater in the dryer wood. The rate of combination of the base with the organic matter of the wood does not show a great variation. In the case of the dry wood the rate of combination is slightly greater in the earlier stages but it equalizes by the end of the cook.

In cooks 643-I and 644-I a slower temperature rise was followed but the acid composition was the same as in the other cooks except cook 640-I. The wood in cook 643-I was kiln dried while that in cook 644-I was boiled in water. Here again, the dry

TABLE 5
COOKING DATA

Cook No.	Chips B. D. Pounds	H_2O in chips Gallons	Acid Gallons	Maximum temperature °C.	Time to maximum temperature Hours	Cook duration Hours	Acid composition after dilution by H_2O in chips: Total SO_2 Per cent	Free SO_2 Per cent	Combined SO_2 Per cent	Yield of crude pulp Per cent	Screenings Per cent	Yield of screened pulp Per cent	Bleach Per cent	Cross and Bevan cellulose Per cent	Lignin Per cent
638-I	85	2.14	57.9	135	12	12½	5.28	4.23	1.05	51.89	0.99	50.9	30	89.02	5.78
640-I	85	18.00	50	138	14¼	14¾	4.04	3.16	0.88	46.92	0.93	46.0	15	95.75	2.92
643-1	85	00.0	63.25	137	15	15¾	5.45	4.30	1.15	47.19	0.49	46.7	15	95.92	2.35
644-I	85	15.64	50.0	138	15	15	5.24	4.10	1.14	51.96	0.66	51.3	24	91.95	5.13
645-I	85	9.8	53.0	138	13½	14	5.57	4.38	1.19	47.90	0.40	47.5	14	97.23	1.55
646-I	85	0.00	50.5	137	13½	14	5.49	4.31	1.18	43.79	0.59	43.2	14	95.70	2.55
647-I	85	14.8	51.0	138	14¼	15¼	5.34	4.21	1.13	41.65	0.65	41.0	8	96.90	0.65
655-I	85.7	1.02	56.0	137	13¼	13¾	5.44	4.36	1.08	43.04	0.99	42.0	10	98.95	2.13

wood favors the disappearance of the base in the early stages of the cook, but the distinction throughout is not as clearly drawn as in the other cooks of the series.

It was hoped that the values for organically combined base (Table 4) would give grounds for a conclusion as to the minimum amount of base required but the evident effect of what may be described as physical variables make such a calculation fruitless. The following table (Table 7) based on the yield and analysis of the pulp shows the extent of the variation.

The inorganic calcium oxide calculated from the combined sulphur dioxide is shown in the Table 3. It will be noted that all cooks except 644-I and 640-I were carried until the concentration of combined calcium oxide was below 0.05 per cent. This determination or the combined sulphur dioxide by the Sander method has been found to be a reliable indication of the point beyond which a cook is in danger of burning. Whether or not it burns and the degree of burning depends upon other factors but it has been the experience of the authors that a cook will not burn as long as bisulphite is present.

TABLE 6—PHYSICAL TESTS—BALL MILL

Cook No.	Maximum strength, pts./lb./ream	Time to maximum strength, min.	Tear, gm./lb./ream	Time to maximum tear, min.	Double folds	Time to maximum folds, min.	Breaking length, meters	Time to maximum breaking length, min.	Stretch, per cent	Time to maximum stretch, min.
638-I	0.968	60	2.10	60	2,260	20	3,660	60	20	60
640-I	0.906	60	2.31	60	930	60	3,350	60	24	80
643-I	0.810	60	2.13	60	1,310	80	3,170	60	22	80
644-I	0.998	40	2.11	40	1,790	20	3,780	60	26	80
645-I	0.879	60	2.55	40	2,120	60	3,170	60	28	60
646-I	0.760	40	2.30	60	700	60	2,540	60	25	60
647-I	0.794	40	2.32	60	990	40	2,940	40	22	80

TABLE 7

Cook No.	638-I	640-I	643-I	644-I	645-I	646-I	647-I	Average
Lbs. lignin removed per lb. calcium oxide	8.8	7.7	8.3	10.3	11.0	10.9	9.3	9.4

In considering the results of this series as a whole some points are worthy of special note. It is a disconcerting fact that part, a very large part, of the base added in the acid does not enter into combination with the dissolved wood material as has been supposed, but while possibly usefully engaged is apparently removed from the sphere of useful activity. In an effort to find out what became of this base a special manipulation was carried out on cook 643-I. Instead of discharging the contents of the digester into the blow pit, the liquor only was first drawn off through a cooler and measured and analyzed. The pulp was washed in the digester and the washings caught, measured and analyzed. The pulp in the digester was then sampled and the calcium oxide determined in it. This pulp showed plainly to the eye the presence of a precipitate that proved to be calcium monosulphite. The results of the determinations are given in Table 8.

TABLE 8

Grams calcium oxide in blow liquor	829
Grams calcium oxide in wash water	318
Grams calcium oxide in pulp	910
Total found	2,057
Grams calcium oxide added in cooking acid	2,538
Grams calcium oxide accounted for	2,057
Unaccounted for	481
Per cent calcium oxide accounted for	81.0

Some base is unquestionably precipitated upon the heating coils and some removed in the cooking as relief and samples. The presence of nearly half the base in the pulp can lead to no conclusion but that the base missing from the liquor is localized around the fibers in some way. Further light upon the manner of its localization will be given in the next paper of this series.

A second noteworthy point is the effect of the moisture content of the chips on the localization of the base. In this series of cooks the amount of localization is seen to vary inversely as the moisture content of the wood, using the expression solely to indicate the direction of the variation.

The rate of disappearance depends further upon the temperature. Cooks 643-I and 644-I were made on a slower temperature rise and it can be readily seen that the rate of disappearance is less than in cooks 646-I and 647-I which are respectively like cooks 643-I and 644-I in that they are kiln-dried or boiled. Examination of liquors from commercial cooks of twenty to twentyfour hours' duration show that with such a slow temperature rise the disappearance is greatly reduced.

One hesitates to draw a conclusion from the small variations in acid strength shown in this series but data taken from other cooks of different acid composition point to the surprising view that the rate of disappearance does not depend upon acid composition but that other conditions being equal the same proportion of the base disappears regardless of the acid composition. This is shown in the following table Fig. 9, in which the cooks are all upon air-dried chips.

TABLE 9

Cook No.	Total SO_2 Per cent	Free SO_2 Per cent	Combined SO_2 Per cent	Base missing Per cent
661-I	5.71	3.50	2.20	54
660-I	5.74	4.61	1.13	52
632-I	3.82	2.41	1.41	57

In these cooks there was no precipitation of lime such as would cause cloudiness in the liquor although an abnormally high combined is seen in one cook and a high combined in one. In some cooks in which the liquor did become cloudy from precipitation, the reduction in the soluble base was as much as seventy-two per cent of the total.

To bring cook 638-I within range of comparison with the other cooks of the series, a repetition was made (cook 655-I) under the same conditions and held for thirteen and three-quarter hours. The data for yield, physical properties and chemical analysis and cooking conditions is shown in the Tables 6 and 7. The hour and a quarter extra cooking given to cook 655-I while making the pulp of easy bleaching quality has reduced the yield 17.5 per cent. Cook 640-I cooked one hour longer is also of easy bleaching quality and the yield 10 per cent greater. The pulp of cook 647-I held fifteen and three-quarter hours with almost complete removal of lignin and the yield still close to that in cook 655-I has evidently not suffered more than cook 655-I in spite of the longer cooking. In cook 645-I is seen a high yield and easy bleaching pulp and cook 646-I cooked the same length of time shows a yield only 90 per cent as much and is slightly harder to bleach. The evidence appears to favor the wood of greater moisture content. The dryer wood tends toward lower yields poorer pulp and shorter cooking time; the wetter woods toward higher yields, better pulp and longer cooking time. All other conditions being equal the wood of high moisture content will give a larger yield of better pulp.

Paper and Pulp Prices Increase in Germany

WASHINGTON, D. C., February 28, 1923.—Prices of cellulose and paper were increased during November by 60 per cent, according to a report received by the Department of Commerce from the American Consul at Frankfort-on-Main. In the latter part of the month the price of news print paper was 40,500 marks per 100 kilograms. These high prices have forced 283 newspapers and periodicals in various parts of the country to cease publication. Conditions of sale are very strict. Prices are not quoted in advance, only those obtaining on the day of delivery being valid. The purchaser is made responsible for any loss entailed through delay in payment, this loss being estimated by comparison of the official gold tariff supplement on the day of delivery and on the day of payment.

RECLAIMING STOCK IN PAPER MILLS*

By George D. Bearce, of the News Print Service Bureau, New York

The question of stock saving in pulp and paper mills appears to be a live subject at the present time and I appreciate the opportunity of discussing the question at this meeting of the Miami Valley Division of the Superintendents' Association. This interest may be attributed to the necessity of reducing costs as well as the desire to eliminate waste as far as possible. In some localities the stream pollution laws are claiming attention and are an important factor. Actual dollars and cents savings can be made by keeping usable stock from going down the river. The study of white water losses is one of the principal questions that the Committee on Waste of the T. A. P. P. I. is considering and perhaps some of the information that has been accumulated may be of interest.

The Superintendent's Chief Concern

The paper mill superintendent is primarily concerned with his quality and quantity production, and the reduction of broke losses. This is essentially right because more production means lowered costs. It usually means safer running of the paper machines with less broken. Everybody is giving more attention to broke nowadays and records are kept by many mills to stimulate this interest and get the machine crews to keep broke losses to a minimum.

About ten years ago I was in a mill in New Hampshire and about the only record they kept was the weight of finished paper. It was an eleven and thirteen hour mill and I was on the 164 inch Pusey & Jones machine, hustling broke mostly. One night we had an especially hard run on 90 lb. manila wrapping and that old machine kicked and bucked from seven 'till about eleven-thirty. You know how 90 lb. wrapping will pile up. When she steadied down we were a tired crowd and as it was the custom for the machine crew to take our naps in relays three of us quickly found a convenient pile of broke and went to sleep leaving the machine tender, third hand and winder man to watch the machine. The rewinder man didn't intend to keep awake anyway and the third hand watching the dry end was just like the proverbial colored gentlemen, "he just naturally went to sleep." I guess the machine tender must have dozed off too because about one o'clock she snapped off between the dryers and calender stack and piled up on the floor for twenty or thirty minutes before any one woke up to give the old shrill whistle that brought us all to our feet again. It's lucky for us that no records were kept that night.

At the present time the white water from many mills slips down the sewer as easily as that broke piled up in the machine room and moreover the waste water fiber is gone because you can't put it back in the beaters. It is a loss that isn't noticeable like broke and one that is difficult to figure in dollars yet it is a thing that the superintendent should be interested in and insist on records of the sewer losses.

Value of Reclaimed Stock Varies

The amount and value of stock that can be reclaimed varies of course with the grade of paper. Probably news, book and board mills are the most serious offenders in contaminating streams with good fiber although there are appreciable losses in mills making other grades. Many contend that they have a system that saves everything but if all the overflow pipes and ditches in the average mill are examined it is generally found that the waste water that is going away from the mill is twice the amount estimated and the reclaimable fiber would represent a good many dollars in the run of a year. In the reclamation of stock the first essential step is to determine just how much water is leaving the mill and the percentage of fiber in the waste water. This may indicate both an excessive stock loss and high fresh water consumption. In a study of water conditions in the machine and beater room it may develop that in a number of places white water can be substituted for fresh thereby making a double saving of water and fiber. In a board mill in the east a thorough study of this problem and the adoption of special white water shower pipes resulted in a reduction of fresh water consumption from about 4,500,000 gallons to approximately 3,800,000 gallons per day. White water is used on the rotary screens, showers and cylinder molds. About the only place where fresh water is used is on the felts.

The Question of Savealls

After all possible white water has been re-used the question of savealls should be considered. There are a number of good makes of rotary screen savealls on the market that are giving satisfactory results. The inclined screen saveall can be used to good advantage on some grades of stock. Any saveall must be kept in order to get results. If you want to go anywhere with your Ford you have to keep your spark plugs clean and the machine in order. Then as the saying goes "it will take you there and get you back." The same idea applies to a saveall and the right machine properly cared for will save money. Available figures indicate that it is possible to reclaim from 1 per cent to 4 per cent of the total stock furnished depending on the grade of paper.

After white water passes through a saveall it is still of value and this is especially true in book and other mills using a large amount of filler. If you get a 50 per cent retention, and that is often the case, where does the other half of your clay go to? Some goes back in tray water but a large amount down the sewer. The settling tank is about the last word in stock saving and has given extremely good results in a number of cases. The use of a coagulant to assist settling has proven very effective in some cases. There is a specially prepared chemical coagulant on the market that has given good results and we know of one mill that is treating the water going to the settling tanks with about 5 grains of alum per gallon.

Conical Type of Settling Tank Best

The conical type of settling tank is ranked as the best and if properly designed and operated will take about everything out of the water that is available but the "squeal." The upper section of the tank has a secondary cylinder a little smaller in diameter than the main tank. The white water enters the space between the inside cylinder and the side of the tank, circulates downward into the main section of the tank, gradually moves upward and the excess goes out to the overflow at the top. The settled stock is drawn off at the bottom of the tank, the water used to furnish beaters, etc., is taken off about half way up the tank and the water near the top of the tank is suitable for showers. This description applies to continuous sedimentation tanks in general although the detailed arrangement may differ in the various makes.

The intermittent settling tank system is also used by some mills. One company in Massachusetts has a series of wood stave tanks and after allowing the waste water to settle about 1½ hours pumps the thickened stock to the beaters and the remainder to filter beds. This special installation was necessary to comply with the very strict laws regarding stream pollution and the health authorities make regular tests of the waste water going back into the river.

To what extent it is possible to save fiber from waste water may be judged by recent findings in England on the subject. The attainable standard adopted as the ideal was ⅓ of a pound of stock per 1,000 gallons. We have figures from one or two mills in this

*Read at the meeting of the Miami Division of the American Pulp and Paper Mill Superintendent's Association, Middletown, Ohio.

country showing losses as low as ½ to ¾ lb. per 1,000 gallons of waste water but the large majority show losses that are 5 to 15 times the above attainable standard.

Saving in Dollars

Assuming that it is possible to save 2 per cent to 4 per cent of stock from going to the sewer what does this mean in dollars? One mill making low grade book assumes a value of 2 cents per pound for their reclaimed stock. With original furnish valued at 3½ to 4 cents per pound this seems a conservative estimate. On the basis of 2 cents per pound and a 2 per cent reclamation of stock the saving for a 100 ton mill would be $100 per day or a dollar per ton of production. Some mills estimate their losses as high as 8 per cent or 10 per cent per ton of product.

The fiber in waste water is a somewhat elusive article but it is not difficult to determine and check. A home made weir in the sewer to check the volume of flow and occasional samples for consistency tell the story. If it is possible to use a liquid level recorder and an automatic sampling device the record is continuous and easier to obtain. With an automatic arrangement to measure and sample you have an equipment that is the "watch dog" over the fiber waste in the mill. I came across a good example of this in a news mill a short time ago. The waste water from the machines was sampled by an automatic water wheel device. Every few days the report by the chemist that came to the manager's desk showed an excessive fiber loss. Upon investigation it was found that one machine occasionally had trouble during the night, blamed it on to the stock and would sluice about a half a chest full down the sewer. Of course this is not a common occurrence but accidents occur in the best regulated families. If savealls are used in a mill a test of sewer losses serves as a check on equipment that is not properly operating. It isn't necessary to employ a whole army of "sewer rats" as one old operating man termed the chemist that was working on white water losses. A small amount of one man's time together with a little equipment is all that is necessary.

Conclusion

In conclusion it might be well to summarize some of the salient points on the reclamation of stock in the waste water of pulp and paper mills.

1. It is of value to the superintendent, from a cost and operating viewpoint to make a careful survey of the mill to determine the volume of waste water going away from the mill and the amount of stock and solids per 1,000 gallons. Are you losing less than 1 per cent of fiber per ton of product? Water is such a common substance in a paper mill and used so extensively as a conveyor of stock that we don't realize what is in it until a test is made.

2. The easiest and most effective way to save both stock and water is by greater re-use of white water. Is it being used in every available place and is your fresh water consumption less than 15,000 gallons per ton of paper?

3. Although most savealls are more or less automatic they need the care and attention given to any machinery. The only way to know whether or not a saveall is really saving is by an occasional test.

4. The saveall is an effective guardian of the unsuspected fiber losses from a paper mill and the continuous testing and recording of white water losses is a positive method of checking both the operation and performance of stock saving machines.

5. The original investment in stock saving equipment is not excessive and the cost of operation and upkeep is only a fractional percentage of the value of material saved.

6. In the final analysis it is really the operating superintendent who will save stock in the mill. His interest in the saveall equipment and the amount of water and fiber going down the sewer will be indirectly reflected in his costs.

I have attempted to give my impression on this subject and a few figures. The Committee on Waste in the Paper Industry is compiling a large amount of information on this subject that will be available in the report at the annual meeting of the T. A. P. P. I. in New York next April, and we will be only too glad to cooperate in every way on the study of this important problem.

Transfers in Grades of T. A. P. P. I.

Since publication of the last list of members of the Technical Association of the Pulp and Paper Industry the following transfers in grade have been made:

JUNIOR TO ASSOCIATE

P. S. Bolton, 31 Orkney Road, Brookline, Mass.
H. G. Boone, Kimberly-Clark Company, Niagara Falls, N. Y.
W. E. Brawn, Pejepscot Paper Company, Brunswick, Me.
C. M. Carrier, Great Northern Paper Company, Millinocket, Me.
W. C. Daley, Forest Products Laboratory, Madison, Wis.
K. T. King, E. I. du Pont de Nemours & Co., Inc., Chicago, Ill.
J. L. Sensenbrenner, Kimberly-Clark Company, Kimberly, Wis.

JUNIOR TO ACTIVE

G. N. Collins, Dill & Collins Company, Philadelphia, Pa.
R. A. Hayward, University of Michigan, Ann Arbor, Mich.
H. H. Jensenius, Nilsen, Lyon & Co., New York, N. Y.
H. W. Laymon, Mead Pulp and Paper Company, Chillicothe, Ohio.

ASSOCIATE TO ACTIVE

J. V. Baron, Sherman Paper Company, Watertown, N. Y.
W. J. Campbell, Northwest Paper Company, Cloquet, Minn.
T. W. Dunn, Detroit, Mich.
G. C. Emigh, York Haven Paper Company, York Haven, Pa.
V. E. Fishburn, Groveton Paper Company, Inc., Groveton, N. H.
R. O. Harper, B. D. Rising Paper Company, Housatonic, Mass.
G. S. Holmes, Yellow Pine Paper Mills Company, Orange, Tex.
W. O. Johnson, Strathmore Paper Company, Woronoco, Mass.
W. A. Kelly, Northern Paper Mills, Green Bay, Wis.
S. D. Lansing, Bagley & Sewall Company, Watertown, N. Y.
C. H. McDuffee, Claremont Paper Company, Claremont, N. H.
G. A. Macklem, Beloit Iron Works, Beloit, Wis.
E. B. Murray, Union Bag and Paper Corporation, New York, N. Y.
A. H. Nevius, Miami Paper Company, West Carrollton, Ohio.
L. J. Parant, St. Croix Paper Company, Woodland, Me.
J. O. Ross, J. O. Ross Engineering Corporation, New York, N. Y.
L. E. Smith, Nekoosa-Edwards Paper Company, Nekoosa, Wis.
W. F. Thiele, Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis.
C. A. Upson, The Upson Co., Lockport, N. Y.
T. M. Uptegraff, Defiance Paper Company, Niagara Falls, N. Y.
A. D. Wood, Champion Fibre Company, Canton, N. C.
C. A. Woodcock, Finch, Pruyn & Co., Glens Falls, N. Y.
Paul Zilske, Detroit Sulphite Pulp and Paper Company, Detroit, Mich.

Paper Testing

A Sectional Meeting on Paper Testing will be held in connection with the Eighth Annual Convention of the Technical Association of the Pulp and Paper Industry in New York, April 9 to 13. Two papers have come to hand, dealing with the comparison between the Valley Size Tester and the Ink Flotation Test for determining the size and quality of paper.

The two papers are by John E. Alexander and M. L. Caust and in them the question is handled along somewhat different lines.

F. A. Curtis, chairman, has also some other papers which will be presented and discussed.

INDUSTRIAL EDUCATION

For the past few months, 130 employees of Nekoosa-Edwards Paper Company of Nekoosa and Port Edwards, Wisconsin, have been attending classes in charge of professors of local high and training schools and taking courses offered by the University of Wisconsin Extension Division and having their paper checked by the professors of that University at Madison.

These men are not only very enthusiastic in their educational work, but many of them are receiving returns from Madison in the way of papers marked "very good" and "excellent." Of the number contracting the course, only four have "flunked" to date.

At a recent meeting of the Rotary Club at Wisconsin Rapids, one of the pupils of the pulp and paper course, A. J. Dudley, a grinderman at the Port Edwards mills, presented a paper on the Manufacture of Mechanical Pulp, which shows the value of these educational classes among those actually performing the mill labor.

Mr. Dudley said in part:

By mechanical pulp we mean the process which causes a separation by mechanical abrasion of the fibers that go to make the pulpwood structure. I shall limit this description to Grinders and Grinding.

For consideration today, I have taken the one form of grinder in common use in most pulp mills, namely, the three pocket hand fed grinder, which uses 24 inch wood, produces 5 to 8 tons of air dry pulp per day and is operated by hydraulic turbines of from three to five hundred horsepower, with a speed of 210 to 240 revolutions per minute.

Care of Grinder

From time to time the grindstone must be sharpened or resurfaced. This is accomplished by means of burrs, or bush rolls, of which there are many types, the type used being determined by the character of the pulp desired. These burrs rotate against the face of the stone, wearing away some of the binding material or matrix, leaving the grit exposed and small channels in which the pulp collects until it is washed off into the pit, thereby preventing regrinding and a recutting of the short fibered pulp. Coarse burrs generally give a larger amount of coarse free stock, also a larger per cent of waste in slivers and chips. The rule is the finer the burr, the less waste, the lower production per hp. applied and the higher the temperature. These burrs are known as straight cut, spiral, diamond point and thread burrs, the effects on the surface of the stone being governed by the number of markings on the face of the burr to the inch.

Factors in Quality and Production

Coming directly to the subject of grinding, I feel I cannot do better than to follow the six subject heads as given by the Forest Products Laboratory at Madison. It says that the factors having a most important bearing upon the quality and production of mechanical pulp, are

1. Power available on any grinder unit.
2. Surface of pulpstone.
3. Pressure of grinding.
4. Speed of pulpstone.
5. Kind and condition of wood.
6. The human element.

First: Briefly the power available varies with the water conditions of the river, the gate opening and speed of water turbines, a lowering of power resulting from either too low or too high water. If loss of power is from low water, this is corrected by closing down one or more grinders, thereby delivering a more uniform power to those stones left operating, and keeping production of those stones up to capacity.

Second: I have previously referred to the surface of the stone. This has a very important effect on the quality and quantity of the pulp produced by any grinder. That is, a stone producing a satisfactory pulp for news print, will not give satisfactory pulp for boards. It is quite necessary then to select a grit suitable for the pulp you desire to produce, a coarse grit giving a coarse free pulp and a fine grit a fine, close pulp. Many pages could be written upon burrs and their effects on the surface of the stone, and the results obtained by their proper use. I will add just a word bearing on the proper use.

The frequency that a stone is sharpened depends upon the pulp it produces—two hours after the stone is sharpened, a handful of pulp should be inspected. This examination should be repeated at intervals and the re-sharpening done when the pulp falls below what the practiced eye knows to be the quality desired. Sharpening is the surest control of quality, yet, no set rule can be laid down as to the time when re-sharpening should be done, for no two things have been created by nature exactly alike. For this reason the skilled, careful, painstaking employee is an absolute necessity. It is in the grinder room that the foundation is laid for a satisfactory, well finished product that must meet competition in the markets of the world today.

Determining Correct Pressure

Third: Without a doubt, next to the surface of stones, the pressure maintained in the grinder cylinder is the most important, as both quantity and quality are varied by the pressure. It may be said that when the stone is sharp, the quality is improved with lowering of the cylinder pressure, and it would be ideal if an even uniform pressure could be maintained at all stages of grinding. For example, in grinding a 12 inch round stock, the unit of pressure is only 1/12 as great when the diameter is reached, as when the block presented a 1 inch surface at the beginning of the operation. Therefore, the ultimate product is a mixture of fibers from sticks or blocks of various sizes at various units of pressure.

Fourth: Next to be considered is the speed of pulpstones. Quite naturally the speed of the stone has a more marked influence on the quantity of the pulp than upon the quality.

Fifth: The kind and condition of wood used. It is much better to keep the pulp from different kinds of wood separate. This is an advantage that cannot be overlooked, particularly if quality is a consideration, for different kinds of wood require different degrees of sharpness of stones to grind them. The pulps are of a different color, the fibers of different length and strength. All wood should be free from bark, rotten spots and sand or other gritty material. One block of wood with only a moderate amount of sand upon it will dull a freshly sharpened stone before it is half ground—causing a waste of time and material.

Sixth: The human element. I am sorry I cannot deal with this subject as freely as I would like. But for one reason only—that I might be misunderstood or misquoted, I would give it a much wider consideration, as it presents so many factors for careful study. It is recorded that certain mill tests show as much as 20 per cent difference in production due to the indifference shown by the attendant. Indeed, one man's indifference may disrupt the entire organization in any department. This indifference in the grinder room may be evinced in a number of ways:

1. Lack of spirit of co-operation.
2. By waste of time.
3. Waste of material.
4. Failure to promptly refill pockets.
5. By improper filling of pockets, so that all available space is not used, or that the wood wedges or pinches against sides of pockets; thereby wasting power, and time, with a resulting curtailment of product.

In closing, I want to say a few words upon education. I am

of the opinion that the time is not far distant when all large manufacturing companies will insist on their employees taking some course of study covering the work of that department in which they are employed. Last October, when the Nekoosa-Edwards Paper Company, presented at an open meeting a most liberal proposition to all of its employees, desiring to take anyone of several courses offered by the University of Wisconsin Extension Division, I recognized an opportunity to add to my practical knowledge of pulp making, the theory, realizing that it would be a great help to me in my work.

. I want to say that, thanks to Prof. Jackson, who has been with us each meeting night, and has made the subject matter so clear and presented it in such an interesting way, that "going to school" again has been one of the bright spots in my life this winter. It has brought out one thing very clearly to my mind, a man may be well up in his work from a practical point of view, but he must dabble in the theory just enough to get started. Then he gets interested, then he wants more of it and shortly he realizes that there is much more to his work than he ever dreamed of, as just a practical paper man.

MR. KAYE WRITES ABOUT RUBBER LATEX

LONDON WALL, E. C. 2, February 1, 1923.

Editor, PAPER TRADE JOURNAL:

In your issue of December 28, 1922, you published an article "Rubber Latex in Paper" by Messrs. M. B. Shaw & G. W. Bicking, Bureau of Standards, Washington, D. C., about which I beg to express some opinions. I was much surprised to find this article in the paper trade journals of England and of the United States of America because the character of it demanded that in all fairness it ought to have been put before me for my judgment and criticism before it was broadcasted so widely.

The Bureau of Foreign and Domestic Commerce, Washington, have for quite a considerable time taken great interest in my process for the use of rubber latex in papermaking, and I have repeatedly supplied them with ranges of samples, literature and shipped to them many months ago about 500 gallons of rubber latex for distribution by them to the paper mills of the United States.

I have been surprised at not having received from them any letter setting out in what condition the latex reached the various mills and what were the results achieved by the papermakers of different grades of paper. I have heard indirectly that in some cases the latex reached the mills in an unsatisfactory condition. If this was generally so it needs some explanation because about 700 gallons of the same shipment of latex used in many British mills was found to be in perfect condition with the exception of two or three small tins which had been damaged in transit. If there was an extensive deterioration of the latex supplied to the Bureau of Commerce it looks as if it had been extensively examined in passing through the United States. I expect that all liquid in sealed drums is suspect by the local officials.

On careful examination of the paper published by Messrs. Shaw and Bicking, I have come to the conclusion that they were working with inferior latex or else there were some factors as to quality of size or as to purity of water which were unsatisfactory. They complain that the couch and press rolls became sticky when running stock containing 2 per cent rubber. This sticky material on analysis, contained 60.5 per cent of substances soluble in acetone and 11.5 per cent soluble in chloroform. The acetone soluble component being resins and the chloroform soluble being probably rubber. Now as *Hevea* rubber, from the latex used, only contains about 3 per cent of resins to the weight of dried rubber it follows that what was thrown out upon the rolls was very largely from the rosin size and not from the latex. This shows the need for a careful study by the papermaker of the condition of the stock relative to the retention of the rosin size. I believe it is well known that difficulties can arise with size even when latex is not used.

It is stated that "paper containing latex after being made and standing a few days had an odor which would be objectionable to users of paper." This statement reveals the fact that the latex used was deteriorated or else there was some other objectionable condition in the material and the process of papermaking in the Bureau of Standards.

I will strongly set against the above assertion the fact that large quantities of latex paper, much of it of the highest commercial qualities of paper, are now being manufactured in many of the finest mills in Britain and none of this paper has any objectionable odor but is able to challenge the highest grades as to purity, brightness and clearness of texture. The conclusions put down by the writers that "the test data seems to indicate a slight increase of bursting strength on bookpaper, the variation of the other strength qualities seem to be within that of testing of different runs" is not in conformity with the results I have obtained in comparison experiments in many mills for many different papers with and without latex as well as to results obtained by many papermakers in Britain and abroad.

This week I have heard from a mill in Finland where the latex paper had a folding number threefold and fourfold that of paper without latex. A mill in Holland reports that the folding number increased by twice that of the same paper without latex.

With regard to figures sent out from the Bureau of Standards experiments that there was no increase in the amount of china clay retained, my figures from repeated experiments are opposed to this, for example, I was recently in Holland when an experiment in a mill there showed that while the ash content of a printing paper without latex was 19 per cent the same paper with latex had an ash content of 25 per cent.

I may say that excellent art papers with latex are being made in England which promise to have a very big sale as the highest quality of printing and lithographic work can be improved on these papers.

While I beg to repeat that many grades of latex paper are being made on a big commercial scale in Britain there are extensive experiments and developments going forward in all papermaking countries of Europe. The papermakers of Scandinavia whose repute is high are achieving splendid results which will have a far-reaching effect.

Yours faithfully

FREDERICK KAYE,
Technical Director Kaye's Rubber Latex Process, Ltd.

Diamond Match Mill at Southford Burned

SOUTHFORD, Conn., February 26, 1923.—Fire February 15 destroyed three buildings of the paper manufacturing plant of the Diamond Match Company here. The loss was estimated at $100,000.

An office building and storehouse were not damaged, these buildings being located outside of the path of the flames.

The plant had been closed down for the last six months. The origin of the fire was unexplained.

Alex Coldwell Goes With G. E. Robertson & Co.

HINSDALE, N. H., February 26, 1923.—L. H. Jeffords, formerly with the A. P. W. Paper Company of Albany, N. Y., and more recently Superintendent of G. E. Robertson & Co., Hinsdale, N. H., has resigned. His place has been taken by Alex. Coldwell, formerly with Edwin Crabtree & Sons, Sunapee, N. H.

PULP AND PAPER CHEMISTRY

At Cornell University, the Department of Chemistry is planning to develop courses in chemistry of pulp and paper, on the one hand for the forestry student who will be engaged in pulpwood production, and, on the other, for the chemist who will be employed at the pulp or paper mill.

Prof. Rhodes Explains Course

F. H. Rhodes, Professor of Industrial Chemistry, says regarding the course:

"It is obvious that there are really two distinct phases to the technology of paper and pulp, the production and harvesting of the raw materials, and the working up of these raw materials into the finished products. The first phase of the work lies within the particular field of the forester while the second phase falls within the province of the chemist. In order to facilitate the co-operation of the forester in the woods with the chemist in the plant, it is advisable that the forester shall have some general knowledge of the methods employed in the plant for the production of the finished product from the raw materials and some understanding of the problems which have to be met in this plant work; while the chemist in the plant should have some familiarity with the methods employed by the forester and with the problems with which he has to deal. We propose, therefore, ultimately to develop two courses or groups of courses in the chemistry of paper and pulp, one group to be primarily for the purpose of giving the forester some training in chemistry and its applications in the pulp and paper industry, the other group designed to give the chemist a thorough training in the methods of pulp and paper production and a thorough understanding of the theoretical principles upon which these methods are based.

To Develop Chemistry Course First

"We expect to develop first the course in pulp and paper chemistry for the forester, because we believe that there is a more immediate demand for such a course and also because the experience which we shall gain from conducting this course will be of assistance to us in the development of the more advanced courses for the chemist. The proposed course in pulp and paper chemistry, intended primarily for foresters, will consist of two lectures a week for one term. It will be offered in the second term of the University year 1923-24. The subject-matter of this course will include the following topics: The chemistry of cellulose and of the other essential constituents of wood; a discussion of the raw materials used in making paper, including wood, cotton, rags, straw and other raw materials; a description of the method for the manufacture of wood pulp, soda pulp, sulphite pulp and sulphate pulp; a discussion of the various processes involved in the conversion of the pulp into finished paper, including beating, sizing, loading, coloring, the manufacture of paper on the machines, calendering, etc., a discussion of the general subject of the design of plants for making paper, a description of the methods of testing pulp and paper, and the various methods of control used in the paper plant; the recovery and de-inking of waste paper; and various other topics related directly to manufacture of pulp and paper.

Intended Primarily for Forestry Students

"This course is intended primarily for forestry students in their third university year. Before being admitted to this course, forestry students will be required to have completed the regular course in Introductory Inorganic Chemistry and the course in Engineering Chemistry. This latter course consists of two lectures a week for a term and covers the essential features of the applications of chemistry in engineering. After having completed these courses and the course in pulp and paper chemistry, the student in forestry should have a very good knowledge of the fundamental principles of chemistry and some familiarity with the application of these principles to general engineering problems, and should be acquainted with the essential features of the processes for the manufacture of pulp and paper and with the chemical principles upon which these processes are based.

"In the development of a course of training for the chemist who intends to specialize in the chemistry of pulp and paper, we shall use as a basis the present required curriculum for the degree of Bachelor of Chemistry. This curriculum is designed to give the student a thorough training in the fundamental divisions of chemistry—inorganic, organic, physical, analytical, and industrial—and such training in mathematics, physics, English, engineering, etc., as may be required to prepare him for his chosen work. In addition to this fundamental required work, the student who specializes in the chemistry of pulp and paper will take the more advanced courses in pulp and paper chemistry, together with other elective courses which will be of value to him in his special fields of work. Among the elective courses which will be recommended are such courses in botany and forestry as will enable the chemist to understand the methods and appreciate the problems of the forester.

The More Advanced Courses

"In the more advanced courses in pulp and paper chemistry there will be included much material that is necessarily omitted from the more elementary course intended for the forester. These courses will be open to fourth year students so that they may apply to the specific field of pulp and paper chemistry all of the fundamental theoretical knowledge which they have gained in the first three years of their course in the university.

"As has been said, the course in pulp and paper chemistry for foresters has been approved and will be offered in the second term of the year 1923-24. The course intended primarily for chemists will not be given next year because we prefer to develop this course only after we have had some experience with the more elementary course."

Sectional Meeting of Mechanical Pulp

At the Eighth Annual Convention of the Technical Association of the Pulp and Paper Industry to be held in New York, April 9 to 13, W. A. Munro, Chairman of the Ground Wood Committee, is planning for a sectional meeting, at which there will be presented a number of valuable papers followed by discussion.

E. R. Low and I. H. Copeland will present a paper on Burrs, in which will be given results of a questionnaire with suggestions for the continuation of the study of this important factor in the manufacture of pulp.

W. E. Brawn has a paper on "The Use of Whitewater" which has a bearing on the study of Waste.

It is also planned to hold a symposium on Grinders to discuss the relative values and efficiencies of pocket grinders compared with those of the automatic magazine type. In this symposium, many prominent engineers have promised to participate.

Kennedy Car Liner Co. to Rebuild

SHELBYVILLE, Ind., February 26, 1923.—The Kennedy Car Liner and Bag Company, manufacturer of paper products will rebuild its plant here, occupying a three acre site, recently destroyed by fire. The cost of the new plant will be about $300,000.

P. W. Codwise Goes With Beaver Products Co.

P. W. Codwise, formerly with Byron Weston Company, Dalton, Mass., has been placed in charge of the research department of Beaver Products Company, Buffalo, N. Y.

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PRICES, PROFITS AND PRODUCTION*

How to Determine the Effect of Manufacturing Effort and Volume on Costs, Selling Prices and Profits

A. F. STOCK AND M. B. GORDON, LYBRAND, ROSS BROS. AND MONTGOMERY, NEW YORK

While commercial and industrial enterprises are carried on for the purpose of making profits, yet often the importance of using a suitable basis for computing the profit factor included in selling prices is unappreciated. It is true that many manufacturers, and particularly those who produce a standard line of product, can do but little towards setting their selling prices, because in these industries selling prices are set generally by competition. On the other hand, there are a number of so-called jobbing industries that must determine the selling prices for each one of their orders, or products. Even industries which manufacture standard competitive lines of products must have a definite basis for determining the original selling prices for these products at some time. It is true also that some selling prices are set on the old rule of "charging whatever the traffic will bear." While the principles submitted in this article cannot be adopted entirely by all concerns or even in part by some of them, the question of determination of profits is of such vital importance in most manufacturing concerns that the subject is well worth study and consideration. The successful merchandise executive is constantly considering the volume of sales, but the manufacturer often pays too little attention to the "volume" basis of doing business.

General Aspects of the Profit Problem

With the merchandise executive the establishment of a selling price involves primarily the determination of the percentage of "mark-up" to be added to the cost of the goods purchased in order to take care of the operating expenses and to give a desired profit percentage upon the anticipated volume of sales. In certain industrial enterprises it is not unusual to find that the estimating or cost departments calculate the selling prices of the individual articles produced irrespective of their relation to the total month's business or the needed volume for that particular concern. Some manufacturers have decided that a 20 or 25 per cent profit should be realized over and above factory costs, plus the selling and administrative costs. This 20 or 25 per cent is applied to every bid or estimate for future work. The "volume" idea and its relation to the monthly profit and loss statement is ignored. Such executives fail to consider the probability of a greater profit being earned if some large orders are secured at prices yielding little or no profit in order to create a greater volume. Under certain conditions, more total profit would be gained by this policy, considering all orders even though the percentage of profit on each particular order might be lower than customary.

"Overall" Percentage Basis Versus "Effort" Basis

Another feature of the problem of setting manufacturing selling prices is the use of the "overall" percentage basis of determining profit on all articles produced. Many manufacturers apply the same percentage of profit on an article that may consist of 90 per cent of material as they would on an article that consists of only 10 per cent material. In the former case, the profit is approaching close to a merchandising basis, when actually he is a manufacturer and should only expect his profits on the efforts of manufacture.

It has been conceded by some authorities that a manufacturer should make the major part of his profits on the "*effort of manufacture.*" The more effort one particular product requires over another, the more profit that particular article should bring. The whole theory of manufacture is to purchase material and then apply labor and the expense of co-ordinating labor and material (which is burden), in such manner as to bring about a profit. This theory means effort. The manufacturer who adopts this theory does not consider so much the buying and selling of the raw materials as he does the *effort* put on the materials.

The above description briefly outlines the two general aspects of the profit problem which will now be discussed in more detail. These may be briefly described as: (a) The necessity for considering the volume when determining the profit for any individual order or product in order to arrive at a selling price; and (b) wherever possible, manufacturing profit should be based on the "effort to manufacture" rather than on a flat percentage over total costs.

Effect of Volume on Selling Prices and Profits

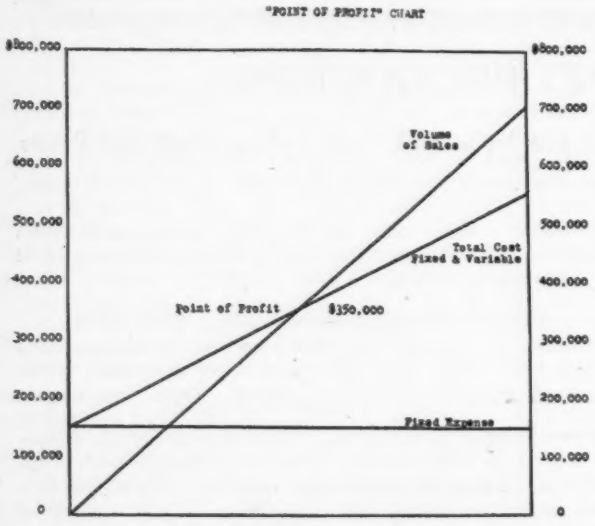
Every industrial concern operates with a certain fixed expense which will fluctuate very little whether the volume of sales is $500,000 per year or $2,000,000. This fixed expense in any plant usually consists of fixed administration salaries, office expenses and a fixed selling expense. The selling expense includes the salaries of the sales department and the usual advertising expenses to keep the products known, but excludes the commissions paid salesmen which naturally vary in proportion to volume and hence are not a fixed expense. It will also include a certain proportion

*Published in Bulletin—National Association of Cost Accounts.

of the indirect pay-roll of the factory, namely, that of the superintendent, the foremen who would be employed regardless of volume, the production department, a certain number of storekeepers to keep the storerooms in condition, tool-room keepers, checkers, inspectors, pensions, taxes, insurance, fire protection, a proportion of the engineering department, a proportion of the factory fuel which is needed to keep the plant on a going basis, telephone charges, water, depreciation, etc.

Most of these expenses will remain practically constant regardless of the volume of business done by any particular concern. It is obvious that the higher any sales volume is above this line of fixed expense, the more chances there are for earning profits. There is a certain point in the volume of any business beyond which the fixed expenses no longer count, as the volume up to that point has already covered them.

A manufacturer's cost includes the fixed expenses previously



mentioned and also the so-called "variable expenses." The variable expenses usually include the productive labor on the parts, the direct material used on all the orders, and a certain proportion of the factory overhead which naturally varies in proportion to the amount of work done, such as the expenditures for supplies used in manufacturing (the more machinery in operation the more supplies used), indirect workers who assist the direct workers, and various items of like nature. It can be assumed that this variable expense will have a definite relation to the volume of business and will vary almost in the same proportion.

The basic theory that might be advanced then is that the manufacturer should try to obtain, at least, such a volume of business as would pay the fixed expense of operating his plant, and also the variable expense which rises in proportion to the volume of production. Expressed in other words, each concern has what is nkown as its "point of profit" or the sales volume needed to operate without loss and from which profits would commence to accrue.

Fixed Expenses

It would be a good plan for every factory manager to have before him a general table or chart showing the fixed expenses in his particular plant and the relation of the variable expenses to sales during a normal period. To illustrate by a simple example, assume that in a given plant the previous year's business was considered a fairly normal year. The sales volume average per month was shown to be $700,000. The fixed expense in this plant was $150,000 per month, whereas the average variable expense per month was $400,000. The following simple chart can then be drawn showing these conditions.

It will be seen that if the present business is taken on the same basis as shown on the chart, namely, if the same relation exists between the established sales prices and the cost of getting out those sales, then the particular plant in question must do a sales volume of approximately $350,000 before it reaches its "point of profit" or the point at which the plant begins to make money.

In the chart illustrated, the horizontal scale has no significance as the data is charted for only one given set of conditions. The width of the chart does not effect the proportion. However, it is obvious that the horizontal scale could be made a time scale if it was desired to plot the sales and costs as they accrue. No effort will be made at this time to enter into the technicalities of the chart as it is thought best to adhere to the simple form (plotting only one set of given conditions on one chart) for clearness and simplicity.

The chart is shown only as a simple illustration of what is meant by determining a point of profit in any given industry. It must be realized that as soon as the relation between the sales price on a certain article and the cost of production of the article changes, the whole relation shown on the above chart must also change accordingly.

It must be realized also that the line in this chart representing the total cost, which is the addition of the fixed and variable cost, will not necessarily be a straight line as shown. It is obvious that the variable cost will probably be somewhat higher on a lesser volume in proportion to the sales than it will be on a greater volume. A greater volume of sales will usually mean longer runs on orders and hence a reduction in the direct labor charges, whereas on the chart shown, the unit "variable costs" do not change. However, the $350,000 point of profit is theoretically close enough to aid the management in determining approximately the volume of business required before profits can be expected.

One of the main reasons for preparing a chart or table of this kind is to point out clearly the line of fixed expense. It is the fixed expense of $150,000 in the above illustration which would force that business to do a volume of $350,000 in sales before making money. Beyond this point, the profits begin to build up because the fixed expense has already been taken care of in the previous volume. It is the consideration of this feature that has enabled a good many manufacturing concerns to obtain the volume which has made them successful.

Decreased Cost Beyond Point of Profit

By examining the chart, it will be noted that business can be solicited above the $350,000 sales volume mark at less than the usual sales price by eliminating the consideration of fixed expense entirely. While it is admitted that having two sales prices on the same article is not a very good practice, still, in some large companies outlets are frequently found to sell the same article at a reduced price and thus give the industry a filler which increases the total volume and reduces the percentage of the various expenses accordingly. Many manufacturers produce the same article under two different names, the one being sold to the regular trade, and the other going to some of the larger mail order houses. The so-called "dumping" process adopted by some manufacturers in selling their goods to foreign countries at a lower price than in the domestic market also brings out this consideration of fixed expenses versus volume. The main point is that the fixed expenses must be met anyway and the larger the volume the smaller the percentage of fixed expenses to total costs.

In a large contract which was recently let, one manufacturer put in a bid in which he eliminated most of his fixed expenses from his cost calculation because he felt that the contract, if received, would provide a so-called "filler" and increase his volume. He realized that he had the fixed expense anyway whether he received the large contract or not, whereas the increased business to his com-

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pany would increase his profits in amount, even though his percentage of profit per unit would be considerably less.

In considering volume, careful attention should be paid to the adding of administrative and selling expenses to total factory costs. Most concerns divide the total administrative and selling expenses by the total factory cost for the previous year to get the percentage which the former bear to the factory cost. This percentage will then be used for the next year without any regard to volume.

Assume in the illustration given above that of the total fixed expense of $150,000 per month, $75,000 is for fixed sales and administrative expenses alone. On the basis of $700,000 per month of sales, this means that the fixed selling and administrative expense is almost 11 per cent. Now assume that the sales volume were doubled. This means that the fixed selling and administrative expense percentage would only be about 5½ per cent instead of 11, and still manufacturers, although they desire this double volume, continue to use the same percentage of selling and administrative expense above their total factory cost in arriving at their selling prices. It is very important to have some idea of the volume of business which a manufacturer expects to do before deciding upon the percentage to add to factory cost for the selling and administrative expenses.

Profit Variation for Different Conditions

What really should be done in connection with the study as to what effect a certain volume will have on the final profit is to construct a different chart using various bases for the variable expense. In other words, the management should ask itself this question: "Supposing we reduce our sales price (on an article) 10 per cent and we think by so doing that we could increase our volume 25 per cent, what would be the result in profit?" In answer to this question a new chart can be drawn showing a new line for the variable expense as well as the sales volume, above the fixed expense, thereby arriving at a new point of profit. Knowing whether or not the market exists for that volume, a managerial decision could be laid down accordingly.

It is unfair to continually burden each expected order, in estimating, with the same percentage for selling and administrative expenses, or even in some cases with the same percentage of burden. Now and then a large order will be received which if made, will decrease all burden percentages and bring the selling and administrative expense percentage way down, because it will result in such a large volume that the fixed expenses will decrease in proportion. When an order of this kind is estimated on, this fact should be faced *before estimating* and not after the order comes into the factory, because it may never be received.

A reduction in price does not necessarily mean a decrease in percentage of profit because if the production is sufficiently increased the cost is reduced in greater proportion than the price. The cost decrease is naturally due to the lessened effect of the fixed charges. As the fixed charges are incurred irrespective of the volume it is evident that their effect becomes less and less important as the volume increases. Eventually, however, a point would be reached where further price reductions result in a lower percentage of profit but yield an increase in the total profit.

Under certain conditions it may be desirable to reduce the price to cost. For example, the volume even, on this basis, may be much less than the capacity of the plant, but it may be desirable to secure all the business possible to hold the organization together.

It is realized that this is not an exhaustive presentation of this particular feature of profit. It is intended principally to stimulate cost accountants and manufacturers to think more along the lines of volume, rather than as some of them do, to consider each individual order on its own basis and then trust to luck that the volume will come.

Effect of Effort of Manufacture on Selling Prices and Profits

The second important feature for determining profit is to base manufacturing profits on the "effort of manufacture" rather than a flat percentage over the total costs after having added the selling and administrative expense. How can this more scientific method for pre-determining profit be accomplished? Where the management has an opportunity of setting some of its own prices, as for example, in a jobbing industry an answer is sought to this question: "With a given investment, in plant, equipment, etc., which we have, and in order to earn a return on this investment, plus say a 10 per cent dividend to the common stockholders, as well as a payment of 7½ per cent to the cumulative preferred stockholders, and also so as to leave a surplus of approximately so much money at the end of a year, how much profit must we earn this year in order to do all of these things?" After determining the amount of profit which can be expected from the business, what basis is there to attach this profit to an order, to assure that the proper ratio of this profit on each order quoted on, is secured. The manager says to himself that he is a manufacturer, and for that reason expects his profit on his efforts. To represent this effort in manufacture, he considers two things, namely, direct labor expenditure, plus the burden on that direct labor. The burden as far as effort goes, is incurred because of the equipment that is used, the expense of maintaining that equipment, tools, supplies, etc., and also the expense of maintaining a productive worker at work. So considering both direct labor and burden, he really has his total effort basis, because after all, the material is merely bought and sold, and the effort in handling that material might be considered as part of the burden. Some may want to add to the material cost a definite percentage for the risks involved in carrying material on hand, plus the expense of purchasing, receiving, storage, etc. Then the manager determines how much direct labor effort and burden effort he will have in the normal year. In doing so he figures how many men he should have busy in Department 1, how many in Departments 2, 3, etc. Applying the normal amounts of burden in each particular case he arrives at his total direct labor and burden amount for his entire plant. Now, if he is satisfied to have each of his departments bring in the same return on their efforts as to profit, then all he needs to do is to divide his total labor and burden amounts into the profit which he pre-determines he should have, and he arrives at a percentage figure per dollar of labor and burden combined, which he should add in determining the price for each and every order. After making his calculation assume that he finds that he will have to add 50 cents on every dollar of labor and burden combined in order to get out of that volume his expected profits for the year. On every order therefore on which he has any labor or burden, he applies this 50 per cent to the total of labor and burden which is the profit on the job rather than a flat percentage on the total cost. This means that the more labor and burden any article requires, the more profit it must bring in, although the percentage of profit based on labor and burden is the same. This method seems to consider better than an other, such a factor as the time required to manufacture, because after all the amount of labor will represent very accurately this amount of time.

A little more should be said regarding a profit on material. The manufacturer, as stated before, should not attempt to earn a profit on his material, which closely approximates the merchandise man's profit, but on the other hand he is entitled to something for the risk involved in carrying material on hand, interest on the investment while being so carried, etc. Most manufacturers who adopt this plan use a profit basis of 10 per cent on the material value to cover both interest on the investment and the risk factor involved.

Illustrations

To illustrate more clearly the above difference in determining profits, let us assume that a certain manufacturer is producing a wide variety of articles, wherein the percentage of material cost to total cost fluctuates to a wide degree. It should be stated that wherever the respective proportions of the material, labor and overhead elements remain fairly consistent for all articles, the overall

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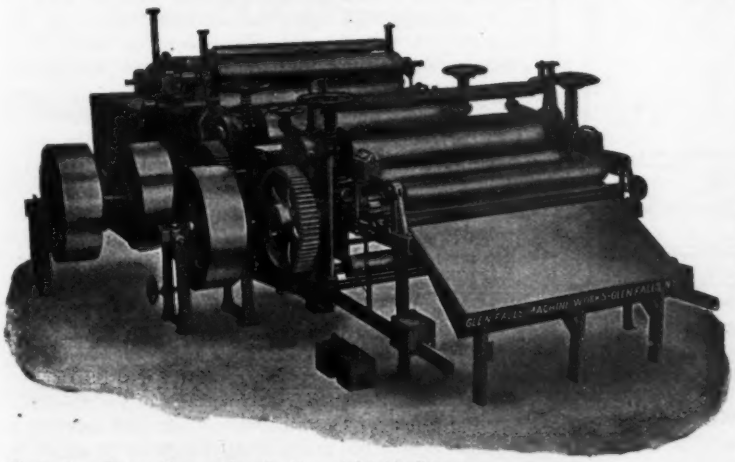

Illustration Shows Rogers Double Press Wet Machine

FOR CHEMICAL PULP—including Sulphite, Sulphate, Soda, also Cotton and Waste Paper fiber.

TYPES—Single and Double Press 72" wide.

CAPACITY—either type 25-30 tons air dry stock per 24 hours.

SHEETS produced by the Double Press Machine uniformly 48% dry. By the Single Press Machine uniformly 40% dry. There is no fold to contain excessive moisture. Sheets are handy size, 33"x36", and are folded once into most convenient bundles for storage, for the beater or for shipping. By this great capacity, high dry test, small amount of floor space per ton pulp produced, exceedingly low cost for labor and maintenance, users are assured that the machine will completely pay for itself within one year, and are promised a handsome return on their investment.

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percentage method of determining profits is sufficiently adequate. For this illustration, however, we are assuming the cost elements to fluctuate. Assume that the previous method was to apply a flat 25 per cent over the total cost, for profit. Now, however, it has been determined that if this manufacturer would add but 10 per cent to his material cost (for profit) and 50 per cent to his total labor and burden (representing his profit on effort) that it would net him a sufficient profit return on the year's volume. He is asked to bid on an article in which the material cost is eighty-five cents, the labor six cents, and the overhead nine cents. The following example will illustrate the different sales price results. (A) represents the old method of 25 per cent profit above costs and (B) the new method. Assume further that the Selling and Administrative expense is 25 per cent of factory cost.

(A)		(B)	
Material cost	$0.85		$0.85
Labor cost	.06		.06
Overhead cost	.09		.09
Total factory cost	$1.00		$1.00
Selling and admin. (25%)	.25		.25
Total cost	$1.25		$1.25
PROFIT		PROFIT	
25% of total cost	$0.31	10% of material	.085
		50% of labor and burden	.075
Selling price	$1.56		$1.41

The Point to Emphasize

The point to emphasize here is that another article having a greater proportion of labor and expense cost would have to bring in the greater profit. So, this plan acts eventually as a levelling process showing which articles the manufacturer is best able to handle as against competition. Naturally, looking at the above illustration, the less the material cost element, the less the difference in net result, except that when the labor and expense become the greater elements, then the selling price goes up, because the manufacturer would charge 50 per cent profit on all labor and expense. This can be illustrated by another example, in which the assumption is made that the elements of cost are: Material ten cents, Labor forty cents and Overhead fifty cents. Then the Selling Price would be determined as follows:

Material cost	$0.10
Labor cost	.40
Overhead cost	.50
Total factory cost	$1.00
Selling and admin. (25%)	.25
Total cost	$1.25
Profit—10% of material	$0.01
50% of labor and burden	.45
Selling price	$1.71

A Decided Difference in Profits

It will be noted from the three examples given that the varying elements of material, labor and overhead make a decided difference on the profits, according to the new method proposed, whereas under the old method, it is only the total cost which is considered.

If the manager feels that the market will not allow him to have each one of his products earn the same profit, then after he determines about how much profit he must earn in a year, he further divides this profit amount according to respective products, and divides each of these product profit amounts by only that direct labor and burden which will be expended on those products, thereby arriving at a different percentage figure to add for profit according to the different products.

Regardless, however, of which of the above two pricing methods is used, it would seem that it certainly is a little more scientific to arrive at profit according to the "effort basis," than merely to apply a flat percentage over everything and trust that the order will come in. Every plant has a certain capacity and will employ a certain number of men, at this normal capacity. When doing so it will have a certain fixed expense, and it should earn a certain amount of profit in order to keep the stockholders and everybody satisfied. Knowing these facts, why cannot profit be pre-determined more often than it is? Furthermore why not have before you continually some sort of chart or statistical statement showing your volume at all times and whether or not this volume is coming anywhere near what your pre-determinations were.

It should be brought out again that it is realized that all concerns cannot adopt the above principles because competition, nature of product, available market, etc., all have a bearing on the determination of selling price and with these concerns it is a matter of taking what they can get and then manufacturing as economically as possible—the result being profit. If, however, some of the above principles can be adopted with advantage, they should be by all means, because after all a profit on effort basis has changed and will frequently change the entire scheme of production.

Speakers for the Paper Exposition

Two notable speakers have been secured for the Printers, Publishers and Advertisers day at the Paper Industries Exposition to be held at the Grand Central Palace the week beginning April 9. This day has already been announced for Friday of Exposition week, and the speakers who have already accepted invitations to places on the program are Don C. Seitz of the New York *World*, and Dr. R. E. Rindfusz, secretary of the American Writing Paper Company.

Mr. Seitz will be in a unique position to talk to such a conference, for while he is at the head of the business department of the great New York newspaper, he is also by virtue of his position with the newspaper organization head of the paper mills which the *World* maintains to provide its supply of news print. He will be given liberty to discuss the situation from either side, or both as he wishes, and has been asked to select his own subject. The general intent of the program, however, is to have the meeting a conference between the consumers of paper and the manufacturers, so that the printers, publishers and advertisers may get answers for paper questions which trouble them.

Dr. Rindfusz will speak on "Standardization of Bonds and Ledgers." A task in which his organization has been active for a long period, in co-operation with groups of paper consumers.

One of the many unique exhibits of an educational nature which are under consideration by the Exposition management is a series of reproductions of watermarks, giving not only the early historic types of watermarks, but the later commercial identification of papers by such marks, and down through the present line of art watermarks, such as are used to a large extent in some foreign paper currency. No decision has as yet been reached on this point, but the reproduction of such marks by transparencies is under serious consideration.

With the Exposition still more than a month distant, it is already assured from the nature and variety of exhibits for which contracts have been signed, that the big paper show will show to the paper manufacturer, the consumer and the interested public the intimate relation existing between all phases of the business, through the whole gamut of the machinery, supply and chemical industry, the paper manufacturing industry, with paper in all of its forms, to the conversion into the large number of rapidly developing new uses for this great American product. A visit to the Exposition will give the visitor a realization why the paper and printing industry is sixth in the entire list of American manufactures.

One of the latest exhibits to be secured is one of a big American firm which handles the product of one of the oldest English manufacturers of fine papers. This exhibit will include a display of the wide range of fancy English papers, while other exhibitors will have displays of the standard lines of foreign paper products.

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NEW YORK

New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, February 28, 1923.

The last week of February was attended by considerable activity in pulp and paper circles of New York. Prices exhibited signs of increased firmness and quotational advances were made in a few lines, including book and fine papers. In these two, leading manufacturers increased contract prices from 4 to 6 per cent, to take effect Thursday of this week. Board moved more freely to consumers at the lower scale of prices, and in the estimation of producers it will not be long before this market regains its vigor of a few weeks past. Tissues and kraft have both held in steady demand and production has not diminished. Lower grades of waste paper have halted in their downward price course, the drop being fairly represented by the decline in mixed papers from $1.50 to $1.25 per cwt. Dealers feel that the steady demand from paper mills added to the increasing firmness in pulp markets bid fair for a continuance of booming business in the waste paper industry during the balance of the Winter and Spring months.

Mechanical pulp has been in strong demand during the past week at the slightly lower prices which recently took effect, and thaws in grinding regions have materially aided production. The chemical pulp market, on the other hand, is steadily increasing in strength with each week that the Swedish strike continues to hold up production. Rumors current in the trade last week to the effect that an arbitration had been agreed to and that workers would return March 1 was entirely discredited at official sources of information. Leading pulp importers state that the situation "doesn't look good," and the majority do not anticipate a settlement before April 1. Last week's decision of the Interstate Commerce Commission, permitting the Boston & Maine Railroad to cut by more than 50 per cent the period of free storage formerly granted pulp importers and to increase storage rates excessively had the effect of diverting considerable quantities of pulp from this port to other points along the Atlantic seaboard for re-shipment.

News print continued its capacity production volume during the week and officials in the trade stated that the month of February had been attended by a satisfying demand on the part of consumers. Shipments are going through with less delay due to rail tieups and the car shortage is decreasing in importance as a deterring factor. Perhaps the most welcome feature in the past ten days to news print manufacturers is the ability of grinders to operate full-blast again in some regions due to heavy rainfall and thaws.

Nothing but optimism is now radiated in book paper circles of New York. One of the largest producers of this commodity told a representative of the PAPER TRADE JOURNAL that his company had from 20 to 25 per cent more actual tonnage booked for the month of February than the capacity of the company's mills. Reports throughout the trade indicated that producers are now accepting orders cautiously in order to be able to keep abreast of their contract shipments.

Fine papers enjoyed an equally heavy demand and it was reported that exports of this commodity are now attaining sizeable proportions. As with book paper, the contract prices on practically all grades of fine paper will be advanced from 4 to 6 per cent and a few houses are advancing bond quotations as much as 8 per cent. According to New York dealers, mills are sold up through next August and there is every reason to believe that business will continue to be good.

Kraft paper failed to evidence any appreciable changes during the week, the demand holding steady and the wrapping paper market exhibiting, on the whole, a very firm tone. The firmness in raw material markets combined with the heavy consuming demand bid fair to hold up kraft prices for some time to come.

Expressions of opinion concerning the board market were considerably at variance last week. Some producers stated that business had increased considerably since the establishment of lower price levels, while others maintained that "they have been" getting their share of business right along and that prices were never changed. Optimism, however, is the keynote in the industry. Both straw and chip board have settled at an average of $65 per ton, with single manila lined chip at $80 and 85-pound test container board, jute-lined, at $82.50 to $85.

Mechanical Pulp

Ground wood maintained a comparatively easy tone throughout the past week and thaws in grinding districts coupled with heavy rains enabled producers to operate at capacity. It is not believed that this market will recede below the $40 mark even after production has regained its normal proportions as it will take several months to catch up on existing contracts and the chemical pulp situation is constantly increasing in firmness. Prices now average $43 to $45 on imported ground wood and $44 to $46 on domestic.

Chemical Pulp

Contrary to rumors which were current in the New York trade of the past week, the Swedish pulp strike has not been settled. An arbitration date has been set for March 15, but in the belief of several prominent pulp importers no arbitration will be effected within the next four weeks. Sweden's pulp production has now been cut off practically for two months, although the general lockout was not declared until January 27. Its curtailment for another month should have a marked effect on prices in the U. S. market. Chemical pulp of all grades has held in exceptionally good demand by paper mills and though there was a slight relaxation in buying during the past week, all indications point to considerably firmer prices and a strong market for the balance of the Winter and spring months at least.

Old Rope and Bagging

Domestic manila rope has held in good call throughout the week, prices to mills averaging 6.50 to 6.60 cents a pound for No. 1 quality. Mixed strings have enjoyed a steady demand and price advances are anticipated.

The bagging situation has remained practically unchanged and while the call for No. 1 scrap has been regular, as a general rule small lots have been involved. Quoted prices on this grade now range from 1.05 to 1.20 cents a pound.

Waste Paper

The higher grades of waste paper have exhibited a healthy tone throughout the past week and even when the bulkier grades dropped off somewhat quotationally, the former maintained a very firm position. While demand from board mills has slacked up in recent weeks, other consumers of waste paper have continued production at a lively rate and are in the market for nearly all grades. No. 1 Mixed has dropped to the range of 1.20 to 1.30, strictly folded news to 1.45, and Common paper to an average of 85 cents a pound. Dealers believe that Mixed paper are beginning to strengthen again and report that the demand from all quarters would prognosticate a resumption of capacity business during the Spring months.

Rags

It is generally believed that the embargoes which the governments of Belgium and Germany have placed on rags, prohibiting their export, will have a strengthening effect upon the American market. If the demand of manufacturers in these two countries is as strong as these measures indicate, it is probably safe to assume that France will divert some of her present production to the markets of her Continental neighbors, thereby greatly diminishing the foreign rag supply of this country.

Twine

Twine dealers last week reported that they believed business to be on the up-grade judging by the increased number of inquiries and fair sprinkling of orders. No changes in twine quotations took effect.

Market Quotations

Paper Company Securities

New York Stock Exchange closing quotations February 27, 1923:

	BID	ASKED
American Writing Paper Company pref.	28	29
International Paper Company, com.	53¼	53¾
International Paper Company, pref., stamped	71	72
Union Bag & Paper Corporation	66	69

Paper

F. o. b. Mill.		
Ledgers	11.00	@38.00
Bonds	9.00	@55.00
Writings—		
Extra Superfine	16.00	@35.00
Superfine	14.00	@30.00
Tub Sized	10.00	@15.00
Engine Sized	8.50	@11.00
News—f. o. b. Mill—		
Rolls, contract	3.80	@ 3.95
Rolls, transit	4.00	@ 4.25
Sheets	4.25	@ 4.50
Side Runs	3.50	@ 4.15
Book, Cased—f. o. b. Mill		
S. & S. C.	7.50	@14.00
M. F.	7.00	@10.00
Coated and Enamel	9.00	@14.00
Lithograph	9.00	@14.00
Tissues—f. o. b. Mill		
White No. 1	1.00	@ 1.15
Colored	1.25	@ 2.50
Anti-Tarnish	1.90	@ 2.40
Silver Tissue	—	@ —
Manila	.90	@ 1.00
Kraft—f. o. b. Mill—		
No. 1 Domestic	7.00	@ 7.50
No. 2 Domestic	6.75	@ 7.00
Imported	6.50	@ 7.00
Screenings	3.25	@ 3.50
Manila—		
No. 1 Jute	8.50	@ 9.00
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.50	@ 5.50
No. 2 Wood	4.00	@ 4.50
Butchers	4.25	@ 4.75
Fiber Papers—		
No. 1 Fiber	6.00	@ 6.25
No. 2 Fiber	5.25	@ 5.50
Common Bogus	3.50	@ —
Card Middies	4.00	@ 5.00
Boards—per ton—		
News	65.00	@ —
Straw	65.00	@ —
Chip	65.00	@ —
Binders' Board	80.00	@ —
Sgl. Mla. Lt.Chip	80.00	@ —
Wood Pulp	77.50	@ —
Container	85.00	@ —
Wax Paper—		
Self Sealing White 28 and 30 lb. basis	10.50	@11.50
Waxed Tissue	1.50	@ 1.60
Glassine—		
Bleached, basis 25 lbs.	15.00	@16.00
Bleached, basis 20 lbs.	17.00	@18.00
Papermakers' Felts, per ton—		
Dry	75.00	@85.00
Saturated	65.00	@75.00
Sheathing Paper, per ton—		
Rosin Sized (red and gray, 30 lbs. per 500 sq. ft.)	55.00	@65.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported	43.00	@45.00

(F. o. b. Mill)

No. 1 Domestic	44.00	@46.00
For immediate shipment	46.00	@ —

Chemical Pulp

(Ex-Dock, Atlantic Ports.)

Sulphite (Imported)—		
Bleached	4.50	@ 5.00
Easy Bleaching	3.25	@ 3.50
No. 1 strong unbleached	3.00	@ 3.25
No. 2 Strong unbleached	2.85	@ 3.10
No. 1 Kraft	3.00	@ 3.20
Sulphate—		
Bleached	4.00	@ 4.25

(F. o. b. Pulp Mill.)

Sulphite (Domestic)—		
Bleached	4.50	@ 5.00
Strong unbl'chd.	3.00	@ 3.25
Easy Bleaching Sulphite	3.00	@ 3.50
News Sulphite	2.75	@ 3.00
Mitscherlich	3.10	@ 3.40
Kraft (Domestic)	3.00	@ 3.25
Soda Bleached	4.25	@ 4.50

Domestic Rags

New Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	11.75	@12.25
New White, No. 2	6.50	@ 7.00
Silesias, No. 1	7.50	@ 8.00
New Unbleached	9.50	@10.00
Washables	4.50	@ 5.00
Fancy	6.25	@ 6.75
Cotton—according to Grades—		
Blue Overall	6.75	@ 7.25
New Blue	4.95	@ 5.20
New Black Soft	5.00	@ 5.50
New Light Seconds	2.90	@ 3.15
O. D. Khaki Cuttings	4.25	@ 4.75
Men's Corduroy	3.15	@ 3.40
New Canvas	6.75	@ 7.10
New Black Mixed	2.50	@ 2.75
Old White, No. 1—		
Repacked	6.00	@ 6.50
Miscellaneous	5.25	@ 5.50
White, No. 2—		
Repacked	3.25	@ 3.50
Miscellaneous	2.85	@ 3.10
St. Soiled White	1.90	@ 2.00
Thirds and Blues—		
Repacked	2.00	@ 2.25
Miscellaneous	1.65	@ 1.75
Black stockings	2.90	@ 3.25
Roofing Rags—		
Cloth Strippings	1.35	@ 1.45
No. 1	1.35	@ 1.45
No. 2	1.25	@ 1.35
No. 3	.85	@ .95
No. 4	.85	@ .95
No. 5A	1.15	@ 1.25

Foreign Rags

New Light Silesias	6.00	nominal
Light Flannelettes	6.75	nominal
Unbl'chd Cottons	7.50	nominal
New White Cuttings	9.50	nominal
New Light Oxfords	6.00	nominal
New Light Prints	4.50	nominal
New Mixed Cuttings	2.00	@ 2.50
New Dark Cuttings	1.90	@ 2.10
No. 1 White Linens	9.00	@11.00
No. 2 White Linens	6.50	nominal
No. 3 White Linens	5.00	nominal
No. 4 White Linens	3.50	nominal
Old Extra Light Prints	2.00	nominal
Ord. Light Prints	1.75	nominal
Med. Light Prints	1.50	nominal
Dutch Blue Cottons	1.85	nominal
German Blue Cottons	1.60	@ 1.70
Ger. Blue Linens	3.50	nominal
Checks and Blues	1.50	nominal
Dark Cottons	1.30	@ 1.35
Shoppery	1.00	@ 1.05
French Blues	1.75	@ 2.00

Bagging

Prices to Mill f. o. b. N. Y.

Gunny No. 1—		
Foreign	1.00	@ 1.10
Domestic	1.00	@ 1.10
Wool, Tares, light	1.45	@ 1.55
Wool, Tares, heavy	1.40	@ 1.50
Bright Bagging	1.05	@ 1.20
No. 1 Scrap	1.05	@ 1.20
Sound Bagging	.85	@ .95
Manila Rope—		
Foreign	6.00	@ 6.25
Domestic	6.40	@6.60
New Bu. Cut	2.15	@ 2.25
Hessian Jute Threads—		
Foreign	5.95	@ 6.25
Domestic	2.20	@ 2.40
Mixed Strings	.90	@ 1.00

Twines

Cotton—(F. o. b. Mill)		
No. 1	.35	@ .37
No. 2	.31	@ .33
No. 3	.37	@ .39
India, No. 6 basis—		
Light	.20	@ .21
Dark	.19	@ .20
B. C., 18 Basis	.41	@ .42
A. B. Italian, 18 Basis	.51	@ .61
Finished Jute—		
Dark, 18 basis	.29	@ .30
Light, 18 basis	.26	@ .27
Jute Wrapping, 3-6 Ply—		
No. 1	.23	@ .24
No. 2	.21	@ .22
Tube Rope—		
4-ply and larger	.15	@ .17
Fine Tube Yarn—		
5-ply and larger	.19	@ .21
4-ply	.20	@ .22
3-ply	.20	@ .22
Unfinished India—		
Basis	.16	@ .17
Paper Makers Twine		
Balls	.13	@ .15
Box Twine, 2-3 ply	.18	@ .19
Jute Rope	.17	@ .20
Amer. Hemp, 6	.33	@ .35
Sisal Hay Rope—		
No. 1 Basis	.15	@ .17
No. 2 Basis	.13	@ .15
Sisal Lath Yarn—		
No. 1	.14	@ .15
No. 2	.11	@ .13
Manila Rope	.18	@ .19

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	4.25	@ 4.50
Hard, White, No. 2	3.75	@ 4.15
Soft, White, No. 1	3.65	@ 3.85
Flat Stock—		
Stitchless	2.60	@ 2.70
Over Issue Mag.	2.65	@ 2.75
Solid Flat Book	2.50	@ 2.60
Crumpled No. 1	2.30	@ 2.40
Solid Book Ledger	3.00	@ 3.25
Ledger Stock	2.70	@ 2.80
New B. B. Chips	1.20	@ 1.30
Manilas—		
New Env. Cut	2.50	@ 2.75
New Cut No. 1	2.05	@ 2.30
Extra No. 1 Old	1.80	@ 1.90
Print	1.50	@ 1.60
Container Board	1.35	@ 1.45
Bogus Wrapper	1.25	@ 1.40
Old Kraft, machine compressed Bales	2.15	@ 2.30
News—		
No. 1 White News	2.25	@ 2.35
Strictly Overissue	1 60	@ 1.70
Strictly Folded	1.40	@ 1.50
No. 1 Mixed Paper	1.20	@ 1.30
Common paper	.80	@ .90

CHICAGO

[FROM OUR REGULAR CORRESPONDENT]

Paper

F. o. b. Mill		
All Rag Bond	35	@ 40
No. 1 Rag Bond	30	@ 35
No. 2 Rag Bond	18	@ 25
Water Marked Sulphite	10	@ 14
Sulphite Bond	9	@ 12
Sulphite Ledger	11	@ 14
Superfine Writing	18	@ 24
No. 1 Fine Writing	14	@ 22
No. 2 Fine Writing	12	@ 20
No. 3 Fine Writing	9	@ 12
No. 1 M. F. Book	6½	@ 7
No. 1 S. & S. C. Book	7	@ 7½
Coated Book	9	@ 10¼
Coated Label	9	@ 10
News—Rolls mill	4	@ 4½
News—Sheets, mill	4½	@ 4¾
No. 1 Manila	4¾	@ 6
No. 1 Fiber	5¾	@ 5¾
No. 2 Manila	4½	@ 5
Butchers' Manila	4	@ 4½
No. 1 Kraft	7	@ 7¼
No. 2 Kraft	6½	@ 7
Screenings	3	@ 4
Wood Tag Boards	5	@ 5½
Boards, per ton—Plain Chip	All quotations withdrawn	
Solid News		
Manila Lined Chip		
Container Line—85 Test		
100 Test		

Old Papers

F. o. b. Chicago

Shavings—		
No. 1 Hard White	4.00	@ 4.25
No. 1 Soft Shav	3.85	@ 4.00
No. 1 Mixed	1.80	@ 1.90
No. 2 Mixed	1.70	@ 1.80
White Envel. Cuttings	4.00	@ 4.25
Ledgers and writings	2.85	@ 3.00
Solid Books	2.75	@ 2.85
No. 1 Books, Light	2.20	@ 2.25
Blanks	2.25	@ 2.50
Ex. No. 1 Manila	2.40	@ 2.50
Manila Envelope Cuttings	2.65	@ 2.80
No. 1 Manilas	1.90	@ 2.00
Folders News (over issue)	1.75	@ 1.80
Old Newspaper	1.50	@ 1.60
Mixed Papers	1.40	@ 1.50
Straw Clippings	1.40	@ 1.50
Binders Clippings	1.40	@ 1.50
Kraft	2.40	@ 2.50
New Kraft Cuts	2.70	@ 2.85
Roofing Stock, f. o. b. Chicago, Net Cash—		
No. 1	32.00	@ —
No. 2	32.00	@ —
No. 3	30.00	@ —
No. 4	28.00	@ —

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT]

Paper

Bonds	.10	@ .60
Ledgers	.15	@ .40
Writings—		
Superfine	.15	@ .20
Extra fine	.12	@ .22
Fine	.20	@ .30
Fine, No. 2	.20	@ .25
Fine, No. 3	.15	@ .20
Book, M. F.	.06	@ .11
Book, S. S. & C.	.08	@ .15
Book, Coated	.08	@ .15
Coated Lithograph	.10	@ .15
Label	.08	@ .15
News	.05	@ .07
No. 1 Jute Manila	.12	@ .13
Manila Sul., No. 1	.08	@ .10
Manila No. 2	.07½	@ .08
No. 2 Kraft	—	@ .10
No. 1 Kraft	—	@ .11
Common Bogus	.02½	@ .03
Straw Board	75.00	@85.00
News Board	65.00	@70.00
Chip Board	62.50	@67.00
Wood Pulp Board	1.25	@ 1.50
(Carload Lots)		
Binder Boards—		
Per ton	75.00	@80.00
Carload lots	75.00	@80.00
Tarred Felts—		
Regular	48.00	@50.00
Slaters	54.00	@56.00
Best Tarred, 1-ply (per roll)	1.35	@ 1.50
Best Tarred, 2-ply (per roll)	1.00	@ 1.15
Best Tarred, 3-ply	1.50	@ 1.65

Bagging

F. o. b. Phila.

Gunny No. 1—		
Foreign	1.25	@
Domestic	1.20	@ 1.25
Manila Rope	5.00	@ 6.25
Sisal Rope	.75	@ .80
Mixed Rope	.75	@ .80
Scrap Burlaps	1.00	@ 1.25
Wool Tares, heavy	2.50	@ 2.75
Mixed Strings	.75	@ .80
No. 1, New Lt. Burlap	1.75	@ 2.00
New Burlap Cuttings	1.75	@ 2.10

Old Papers

F. o. b. Phila.

Shavings—		
No. 1, Hard White	4.00	@ 4.25
No. 2, Hard White	3.50	@ 3.75
No. 1 Soft White	3.60	@ 3.75
No. 2 Soft White	2.00	@ 2.25
No. 1 Mixed	1.60	@ 1.75
No. 2 Mixed	1.25	@ 1.50

(Continued on page 70)

Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING FEBRUARY 24, 1923

SUMMARY

News print.....3,891 rolls
Cigarette paper.....46 cs.
Wall paper.....23 cs., 541 bls., 1,697 rolls
Hangings.....141 rolls, 94 bls., 9 cs.
Drawing paper.....21 cs.
Surface coated paper.....72 cs.
Parchment paper.....2 bls., 16 cs.
Litho paper.....38 cs.
Tinfoil paper.....24 cs.
Colored paper.....43 cs.
Photo paper.....4 cs.
Wrapping paper.....2 cs., 155 bls., 372 rolls.
Tissue paper.....23 cs.
Filter paper.....11 cs., 3 pgs.
Printing paper.....115 bls.
Metal paper.....17 cs.
Miscellaneous paper....4,076 rolls, 534 bls., 20 cs.

CIGARETTE PAPER

P. S. Schweitzer, Berengaria, Liverpool, 13 cs.
G. A. Henshaw & Sons, Celtic, Liverpool, 23 cs.

WALL PAPER

A. C. Dodman, Jr., Berengaria, Liverpool, 4 cs.
A. C. Dodman, Jr., by same, 6 bls.
A. C. Dodman, Jr., Samland, Antwerp, 6 bls.
A. C. Dodman, Jr., by same, 19 cs.
The Prages Co., by same, 1,697 rolls.
A. Murphy & Co., Celtic, Liverpool, 6 bls.
G. J. Hanken Co., Inc., Mt. Clinton, Hamburg, 2 bls.
The Prages Co., Seydlitz, Bremen, 480 bls.
F. A. Binder, by same, 21 bls.
F. A. Binder, Pres. Harding, Bremen, 14 bls.
F. Murray Hill Co., Inc., Minnekahda, Hamburg, 6 bls.

PAPER HANGINGS

The Prages Co., Minnekahda, Hamburg, 141 rolls.
W. H. S. Lloyd & Co., Mesaba, London, 94 bls.
W. H. S. Lloyd & Co., by same, 9 cs.

DRAWING PAPER

Favor Ruhl & Co., Mesaba, London, 5 cs.
M. G. Lange, America, Bremen, 11 cs.
H. Reeve Angel & Co., Mesaba, London, 5 cs.

SURFACE COATED PAPER

Defender Photo-Supply Co., America, Bremen, 72 cs.

PARCHMENT PAPER

H. H. Meyer & Co., America, Bremen, 2 bls.
Irving National Bank, Samland, Antwerp, 16 cs.

NEWS PRINT

Parsons & Whittemore, America, Bremen, 1,422 rolls.
Parsons & Whittemore, Pres. Harding, Bremen, 1,434 rolls.
C. H. Young, by same, 234 rolls.
Journal of Commerce, by same, 470 rolls.
H. Reeve Angel & Co., by same, 220 rolls.
Chemical National Bank, Volendam, Rotterdam, 111 rolls.

LITHO PAPER

B. C. Ritchie & Co., Hannoner, Canton, 30 cs.
Ault & Wiborg, Gaelic Prince, Hongkong, 8 cs.
E. Morgan Sons, Celtic, Liverpool, 24 cs.

COLORED PAPER

C. W. Williams, Samland, Antwerp, 21 cs.
Borden, Riley Paper Co., by same, 22 cs.

PHOTO PAPER

Gevaert of America, by same, 4 cs.

WRAPPING PAPER

H. Reeve Angel & Co., Samland, Antwerp, 2 cs.
Wilkinson Bros. & Co., Inc., Editor, Rotterdam, 155 bls.
Kupfer Bros. & Co., Mt. Clinton, Hamburg, 372 rolls.

TISSUE PAPER

Wilkinson Bros. & Co., Inc., Celtic, Liverpool, 10 cs.
F. C. Strype, by same, 10 cs.
Meadows Mye & Co., by same, 3 cs.

FILTER PAPER

H. Reeve Angel & Co., Mesaba, London, 11 cs.
C. D. Stone, Seydlitz, Bremen, 3 pgs.

PRINTING PAPER

J. H. Norris & Co., Pres. Harding, Bremen, 115 bls.
Hensel, Bruckman & Lorbacher, Minnekahda, Hamburg, 17 cs.

PAPER

C. K. MacAlpine & Co., Minnekahda, Hamburg, 42 rolls.
C. K. MacAlpine & Co., by same, 2 bls.
M. M. Cohen, by same, 70 bls.
M. M. Cohen, by same, 126 rolls.
P. H. Petry & Co., by same, 13 cs.
Chemical National Bank, America, Bremen, 305 rolls.
Chemical National Bank, Norefjord, Kristiania, 694 rolls.
American Exchange National Bank, Mt. Clinton, Hamburg, 3,273 rolls.
Great Eastern Paper Co., Fred. VIII, Copenhagen, 208 bls.
Equitable Trust Co., by same, 171 bls.
F. L. Kraemer & Co., Pr. Van Buren, London, 7 cs.
Bank of United States, Aspen, Gothenburg, 195 rolls.
Seggerman Bros., by same, 267 rolls.
M. Winter, by same, 2,074 rolls.
M. Winter, by same, 83 bls.

RAGS, BAGGING, ETC.

E. J. Keller, Co., Inc., Beemsterdyk, Rotterdam, 43 bls. rags.
L. H. Abenheimer, by same, 56 bls. rags.
American Exchange National Bank, by same, 64 bls. rags.
W. Hughes & Co., by same, 30 bls. cotton waste.
Reis & Co., by same, 67 bls. cotton waste.
J. Spunt & Co., Gaelic Prince, Shanghai, 220 bls. cotton waste.
Royal Manfg. Co., by same, 432 bls. cotton waste.
Royal Manfg. Co., Hannoner, Shanghai, 288 bls. cotton waste.
Ayres, Oddy & Co., Port Auckland, Liverpool, 58 bls. cotton waste.
E. Raymond & Co., Celtic, Liverpool, 28 bls. cotton waste.
Albion Trading Co., by same, 20 bls. rags.
Irving National Bank, Samland, Antwerp, 491 bls. flax waste.
Irving National Bank, Carlier, Antwerp, 235 bls. flax waste.
International Acceptance Bank, by same, 95 bls. cotton waste.
International Acceptance Bank, by same, 29 bls. new cuttings.
E. J. Keller Co., Inc., Roussellon, Havre, 103 bls. rags.
R. F. Downing & Co., Nortonian, Manchester, 119 bls. new cuttings.
N. Y. Trust Co., by same, 71 bls. bagging.
Brown Bros. & Co., by same, 133 bls. waste paper.
E. J. Keller Co., Inc., Volendam, Rotterdam, 170 bls. rags.
Equitable Trust Co., Nw. Miller, London, 310 bls. waste paper.
London & Liverpool Bank of Commerce, by same, 47 bls. waste paper.
National City Bank, Sw. Miller, London, 199 bls. rags.
International Acceptance Bank, Bradford City, Liverpool, 53 bls. waste paper.
Brown Bros. & Co., by same, 100 bls. paper stock.

OLD ROPE

L. H. Abenheimer, Beemsterdyk, Rotterdam, 58 bales.
W. Schall & Co., Marengo, Newcastle, 162 coils.
Brown Bros. & Co., by same, 66 coils.
Brown Bros. & Co., Marengo, Hull, 115 coils.
Brown Bros. & Co., Samland, Antwerp, 129 coils.
New York Trust Co., Minnekahda, Hamburg, 70 coils.
Katzenstein & Keene, Inc., Kristianiafjord, Naples, 21 bales.

WOOD PULP

Woodpulp Trading Co., Ltd., Norefjord, Kristiania, 8,000 bales.
Woodpulp Trading Co., Ltd., Birk, Norway, 12,795 bales. 2,559 tons.
Kidder, Peabody Accep. Corp., by same, 1,250 bales, 250 tons.
Brown Bros. & Co., by same, 9,525 bales, 1,905 tons.
Tidewater Papermills Co., Borneholm, Liverpool, 12,443 bales.
Whalen Pulp & Paper Co., M. Dollar, Vancouver, 6,120 bales.
Nilsen, Lyon & Co., Cartier, Antwerp, 993 bales.
Seggerman Bros., Aspen, Gothenburg, 400 bales.
E. M. Sergeant & Co., by same, 1,648 bales.
Johanesson Wales & Sparre, Inc., by same, 1,355 bales.

CASEIN

Atterbury Bros., Southern Cross, B. Aires, 1,501 bags.
Kalbfleisch Corp, by same, 2,498 bags.
A. Klipstein & Co., by same, 125.

BALTIMORE IMPORTS

WEEK ENDING FEBRUARY 24, 1923

Woodpulp Trading Co., Ltd., King City, Hamburg, 3,200 bls. wood pulp.
M. Gottesman & Co., Inc., Ringborg, Christiania, 2,000 bls. wood pulp.
Alex Brown, Breiz Izel, Bordeaux, 160 bls. rags.
Certainteed Products Corp., by same, 99 bls. rags.
E. J. Keller Co., Inc., Glen Ridge, Rotterdam, 198 bls. rags.

BOSTON IMPORTS

WEEK ENDING FEBRUARY 24, 1923

J. A. & W. Bird & Co., Clan MacWilliam, Melbourne, 1,000 bags casein.
G. W. Wheelwright Paper Co., Virginian, London, 46 bls. waste paper.
Crocker, Burbank Co., by same, 40 bls. waste paper.
First National Bank of Boston, by same, 388 bls. waste paper.

PHILADELPHIA IMPORTS

WEEK ENDING FEBRUARY 24, 1923

J. J. Bushey, C. Conqueror, Auckland, 350 bags casein.
Dill & Collins, Nw. Miller, London, 193 bls. waste paper.
Equitable Trust Co., by same, 75 bags waste paper.
London & Liverpool Bank of Commerce, by same, 203 bls. waste paper.
Irving National Bank, by same, 64 bls. waste paper.
E. J. Keller Co., Inc., Edmore, Kobe, 50 bls. cotton waste.
E. J. Keller Co., Inc., Marigot, Rouen, 187 bls. rags.
E. J. Keller Co., Inc., Marigot, Havre, 1,041 bls. rags.
E. J. Keller Co., Inc., Marigot, St. Nazaire, 416 bls. rags.
E. J. Keller Co., Inc., Marigot, Brest, 596 bls. rags.
Castle & Overton, Breiz Izel, Bordeaux, 536 bls. rags.
Castle & Overton, by same, 149 coils old rope.
Katzenstein & Keene, Inc., Kristianiafjord, Naples, 44 bls. old rope.

NEW ORLEANS IMPORTS

WEEK ENDING FEBRUARY 24, 1923

Katzenstein & Keene, Inc., West Wauna, Liverpool, 74 bls. rags.
Katzenstein & Keene, Inc., by same, 49 bls. rag cuttings.

CHARLESTON IMPORTS

WEEK ENDING FEBRUARY 24, 1923

E. J. Keller Co., Inc., Chebaulip, Rotterdam, 545 bls. bagging.

Felt Test—Lowest Cost per Ton

If you judge felt values, not by what you put into the equipment, but what you get out of it—then you will specify ORR 3 stripe Endless Felts for ORR felts will produce the lowest cost per ton. They "stand up" under severe usage. Orr durability is acknowledged everywhere. Their strength and long life are as dependable as their reliability and quality.

In the 32 grades of Felts and Jackets we can match your most exacting demands. Tell us the kind of paper you desire to make, and we will send you samples of felts that will economically serve you and help you to produce paper at lowest cost per ton.

THE ORR FELT & BLANKET COMPANY, Piqua, Ohio

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Members New York Cotton Exchange

100 Broadway, New York
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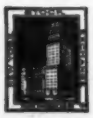

BONDS STOCKS COTTON	Bought and Sold on Commission

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We continue to maintain at the top the quality of Excelsior Felts, as we have done since we, as pioneers, made the first endless paper machine felts manufactured in America.

Seamless felts for fast running.
Satin Style felts for finish.
Special felts to meet every condition.
Send us your felt problems.

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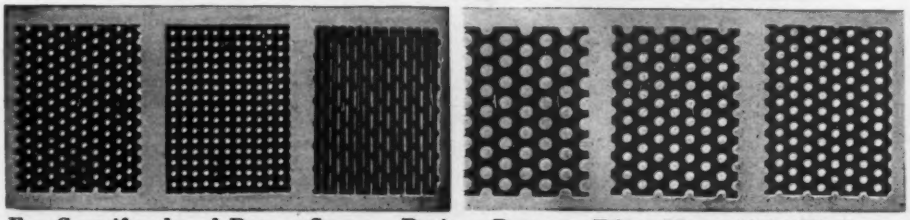
All sizes and shapes of Holes



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The Harrington & King Perforating Company 1
618 No. Union Ave., Chicago, Ill., U. S. A. New York Office, 114 Liberty St.

Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
TUESDAY, FEBRUARY 27, 1923.

BLEACHING POWDER.—No change of significance has entered the bleach market of the past week. Quotations have ranged between 1.90 and 2.00 cents a pound and demand is steady.

BLANC FIXE.—Moving to consumers in regular consignments, blanc fixe has undergone no quotable changes. The pulp now lists at an average of $45 to $50 per ton, while dry blanc fixe is priced at $85 to $90. The market is considered firm.

CAUSTIC SODA.—The uncertainty of embargoes in the New England district has given caustic shipments of the past few months an unsettled aspect, but the current rate of consumption is keeping producers busy. No deviation from the price of 2.50 cents a pound has been quoted on caustic.

CHINA CLAY.—Demand continues very heavy for all grades of coating and filling clays. Excessive rains in the Cornwall district of England have retarded shipments to a certain degree and importers feel that this will be reflected in the American market owing to the strong call from domestic mills and fast diminishing supply here. The imported clays have held at $16 to $22 per ton, washed domestic at $12 to $15 and unwashed at $9 to $12 on the average.

CASEIN.—This milk-product still continues to be a scarce article in the U. S. markets. Dealers have apportioned their incoming supplies of Argentine casein on an allotment basis for some time past and quoted prices range from 21 cents a pound, up.

LIQUID CHLORINE.—Distributors of liquid chlorine report an ever-increasing demand from the paper manufacturing trade and believe that business will continue to prosper throughout the balance of the current year in view of the strides which are being made in the fine and book paper industries. Prices are quite firm at 6.00 to 6.20 cents a pound for chlorine in 100-pound cylinders.

PAPERMAKERS' GLUE.—No changes have been evidenced in the paper mill demand for glue, of the grades used in tub sizing. Hide glue, of good consistency, ranges from 14 to 19 cents a pound.

ROSIN.—Rosin exhibited a slightly firmer tone in the course of the past week and prices ex-dock, New York, have held at 5.80 cents a pound for grades E, F and G, in barrels of 280 pounds.

SALTCAKE.—A very strong tone has prevailed in the saltcake market in recent weeks. The commodity is now quoted at $25 to $26 for chrome and $27 for acid cake.

SODA ASH.—Shipments of soda ash have been of a haphazard nature in late months owing to the constantly changing embargo rulings in New England. The 48 per cent basis grade has, however, maintained its schedule price of 1.20 cents a pound and the market is firm.

STARCH.—With the exception of the fact that starch is moving to paper mills in considerably larger volume than it has been for some time, no particular changes have been noted in the market for this corn product. Powdered starch is still listed at 2.72 cents a pound in bag quantities and 3.00 cents a pound in barrels, while the papermakers' grade is quoted at 2.82 and 3.10 cents for these respective packings.

SULPHATE OF ALUMINA.—Alum is reported to be a little easier in the East, prices having declined approximately five to ten cents per cwt. Commercial sulphate of alumina now quotes at 1.45 to 1.60 cents a pound along the Atlantic seaboard, while Western producers are quoting approximately 1.25 to 1.30. The iron free grade is now held at 2.55 to 2.75 cents a pound.

SULPHUR.—Sulphur producers state that business is good and from all indications the current prices of $18 to $20 per ton will rule for the balance of the year.

TALC.—American talc, of the grade used by papermakers, is now listed at $14 to $16 per ton. Demand is reported to have increased materially in recent weeks.

Market Quotations

(Continued from page 67)

Solid Ledger Stock.	2.75	@	3.00
Writing Paper.....	2.50	@	2.75
No. 1 Books, heavy.	2.25	@	2.50
No. 2 Books, light.	1.40	@	1.50
No 1 New Manila.	2.75	@	3.00
No 1 Old Manila..	1.50	@	1.75
Container Manila...	1.35	@	1.50
Old Kraft.....	2.25	@	2.50
Overissue News....	150	@	1.60
Old Newspaper....	1.20	@	1.35
No. 1 Mixed Paper.	1.10	@	1.15
Common Paper.....	1.00	@	1.10
Straw Board, Chip.	1.00	@	1.10
Binders Bd., Chip..	1.00	@	1.10

Domestic Rags—New.
Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.12	@	.12¼
New White, No. 2	.07	@	
Silicias, No. 1....	.07¼	@	.07½
New unbleached..	.10	@	.11
Washables	.04½	@	
Fancy	.05¼	@	.05½
Cottons—according to grades—			
Blue Overall....	.05½	@	.05¾
New Blue.....	.02¾	@	.02¾
New Black Soft.	.06¼	@	.06½
New Light Seconds	.02¾	@	.02¾
Khaki Cuttings..	.11	@	.04½
Corduroy	.03½	@	.04
New Canvass....	.08¼	@	.08¾
New Black Mixed	.04	@	
Old			
White, No. 1—			
Repacked	.06	@	.06½
Miscellaneous ...	.04½	@	.04¾
White, No. 2—			
Repacked	.03½	@	.04
Miscellaneous ...	.03	@	.03¼
Thirds and Blues—			
Repackeed	200	@	2.25
Miscellaneous ...	1.85	@	1.90
Black Stockings....	2.75	@	3.00
Roofing Stock—			
No. 1.....	1.35	@	1.40
No. 2.....	1.25	@	1.30
No. 3.....	1.15	@	1.20
No. 4.....	1.15	@	1.20
No. 5A.....	1.10	@	
B.....			nominal
C.....			nominal

BOSTON

[FROM OUR REGULAR CORRESPONDENT]

Paper

Bonds	.09	@	.63
Ledgers	.09½	@	.55
Writings	.08½	@	.42
Superfine	.16	@	.26
Fine	.15	@	.18
Books, S. & S. C..	.07¼	@	.12
Books, M. F.....	.06¾	@	.09½
Books, coated	.09	@	.15
Label	.09	@	.13
News, sheets	4.75	@	6.00
News, rolls	4.50	@	5.75
Manilas—			
No. 1 Manila..,$6.00		@	7.00
No. 1 Fiber ...	.06½	@	.07
No. 1 Jute	9.00	@	10.50
Kraft Wrapping ..	.07	@	
Common Bogus ...	3.50	@	3.85

Boards

(Per Ton Destination)

Chip $65.00		@	67.50
News, Vat Lined..	67.50	@	—
Wood, Vat Lined.	$72.50	@	75.00
Filled News Board	67.50	@	70.00
Solid News Board.	72.50	@	75.00
S. Manila Chip...	75.00	@	—
Pat. Coated	85.00	@	87.50

Old Papers

Shavings—			
No. 1 Hard White	4.25	@	4.40
No. 1 Soft White	3.00	@	3.50
No. 1 Mixed....	1.50	@	1.75
Ledgers & Writings	2.25	@	2.50
Solid Books.....	2.25	@	2.50
Blanks	1.70	@	1.80
No. 2 Light Books.	1.75	@	1.90
Folded News, overissues	24.00	@	26.00
Gunny Bagging ...	1.00	@	1.15
Manila Rope	5.75	@	6.00
Common Paper ...	20.00	@	23.00
Old News	23.00	@	25.00
Old Kraft	2.00	@	2.10

TORONTO

[FROM OUR REGULAR CORRESPONDENT]

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.11	@	.12½
Light tinted.....	.12	@	.13½
Dark tinted.....	.13½	@	.15
Ledgers (sulphite).	—	@	.13
Writing	.09½	@	.12
News, f. o. b. Mills—			
Rolls (carloads).	3.75	@	—
Sheets (carloads)..	—	@	4.50
Sheets (2 tons or over)	—	@	4.75
Book—			
No. 1 M. F. (carloads)	9.00	@	—
No. 2 M. F. (carloads)	8.00	@	—
No. 3 M. F. (carloads)	7.50	@	—
No. 1 S. C. (carloads)	9.50	@	—
No. 2 S. C. (carloads)	8.50	@	—
No. 1 Coated and litho. 14.00		@	—
No. 2 Coated and litho. 13.00		@	—
No. 3 Coated and litho. 12.25		@	—
Coated and litho., colored 14.25		@	—
Wrapping—			
Grey	5.00	@	—
White Wrap....	5.75	@	—
"B" Manila.....	6.00	@	—
No. 1 Manila....	7.25	@	—
Fiber	7.25	@	—
Kraft, M. F.	8.00	@	—
M. G.	8.15	@	—

Pulp

(F. o. b. Mill)

Ground wood.....$45.00		@	50.00
Sulphite easy bleaching 60.00		@	70.00
Sulphite news grade.	55.00	@	60.00
Sulphite, bleached.	95.00	@	100.00
Sulphate 70.00		@	—

Old Waste Papers

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut..	3.85	@	—
Soft White Book shavings	3.60	@	—
White Blk News.	2.30	@	—
Book and Ledger—			
Flat Magazine and Book Stock(old)	2.30	@	—
Light and Crumpled Book Stock	2.15	@	—
Ledgers and Writings	2.50	@	—
Solid Ledgers....	2.50	@	
Manilas—			
New Manila Cut.	2.30	@	—
Printed Manilas..	1.85	@	—
Kraft	2.50	@	—
News and Scrap—			
Strictly Overissue	1.60	@	—
Folded News....	1.60	@	—
No. 1 Mixed Papers	1.35	@	—

Domestic Rags—
Price to mills, f. o. b. Toronto Per lb.

No. 1 White shirt cuttings	.12½	@	.13
No. 2 White shirt cuttings	.06½	@	.07
Fancy shirt cuttings	.06¼	@	.06½
No. 1 Old whites	.04¼	@	—
Thirds and blues	2.50	@	2.65

Per cwt.

Black stockings...	2.55	@	—
Roofing stock:			
No. 1.....	—	@	—
No. 2.....	—	@	—
Roofing stock:			
Manila rope.....	6.15	@	—
No. 2.....	1.55	@	—
Gunny bagging....	1.05	@	—